



A PHARMACY CONTINUING EDUCATION PROGRAM

W-F Professional Associates, Inc. 400 Lake Cook Rd., Suite 207 Deerfield, IL 60015 847-945-8050

Part 2 "Disaster Preparedness in Pharmacy" 707-000-10-010-H04-P

**Disaster
Preparedness in
Pharmacy
Part 2**



*Fulfills Georgia
Requirement.*

GEORGIA PHARMACISTS.

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This is Part 2 of our unit on Emergency Preparedness. Along with last month's lesson, they fulfill the 3.0 hour Georgia requirement. In this lesson we review preparing your pharmacy, mass immunization programs, protocol development, and preparing a program for biological warfare. 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 707-000-10-010-H04-P. Pharmacists completing this lesson by October 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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Part 2

In the previous lesson, we reviewed emergency & disaster situations that pharmacists must be prepared for. We also discussed some specific examples of these situations.

This lesson (Part 2 on Emergency Preparedness for the Pharmacist) takes a look at:

- Preparing your pharmacy.
- Mass immunization programs.
- Planning & protocol development.
- Preparing against biological warfare.

We conclude this lesson by presenting a few scenarios (case exercises).

BACKGROUND

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 last) is to review direction on how pharmacists may prepare for emergencies and provide assistance to the community.¹

PREPARING YOUR PRACTICE

There are a number of general steps that are needed to prepare pharmacies for emergencies.

1. Preparing the Pharmacy

- Pharmacists should maintain ongoing certification in basic life support (CPR).
- All pharmacy staff members should complete an immunization certificate training program in order to provide basic immunization services in the pharmacy.
- Develop immunization documentation record, screening questionnaire and consent forms for immunization program.
- Develop an emergency plan for the pharmacy. In the case of influenza pandemic, plan for potential staff shortage due to illness.
- Consider participating in local and state emergency planning meetings so that you are aware of available community resources.
- Register the pharmacy with local organizations that coordinate emergency healthcare (i.e. American Red Cross).
- Retain updates on the status of influenza in your region. The CDC has a status report of weekly flu activity that can be accessed at www.cdc.gov/flu/weekly/fluactivity.htm
- Establish an emergency system to ensure the integrity of medications that require refrigeration or freezing. Make sure the system identifies key staff to implement the process.
- Establish a plan of how pharmacy staff will be called in during an emergency. For staff with children, it is important to be prepared in the case of school closings.

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- Determine what activities require the presence of pharmacy staff; and which can be done off-site.
- Ensure that there is a plan for electrical outage. How will prescriptions be filled and patient information obtained?
- Implement an emergency program for obtaining medications and supplies from wholesalers.
- If there is evidence of a potential disaster or pandemic situation, anticipate resource needs, including masks, gloves, OTC medications or hand hygiene products.
- Review commonly prescribed medications in the event your patients may need additional supplies of prescription medications on short notice.

2. Preparing Patients

- Encourage patients to prepare a medical and pharmacy information list including emergency contact information, current medications and allergies. Keep in a waterproof container.
- Distribute a checklist for a basic emergency kit. See Appendix A for a list of components. Keep inventory of these in the pharmacy. Develop emergency kits with pharmacy logo.
- Conduct emergency preparedness education programs for the community. These may be held at your pharmacy or at local community centers.
- The Center for Disease Control now recommends that all individuals over 6 months of age should receive an influenza vaccine. Send reminder mailings to patients so that they are aware of this change. Provide information on when the vaccine is available at your pharmacy.
- Communicate your immunization program to local physicians’ offices and healthcare systems.
- Establish a program to offer influenza vaccine to assisted living, retirement facilities, nursing homes and home-bound patients.¹⁷
- Offer pharmacists to speak to school groups and other organizations about emergency preparedness.
- Provide information translated into Spanish or other languages as appropriate.
- Provide links to emergency preparedness on pharmacy websites.

MASS IMMUNIZATION PROGRAMS

In situations where there is an outbreak of a communicable disease as we saw in 2009 with H1N1, mass immunization programs may be deployed. These mass immunizations may take place in specific locations that are easy for the public to access, such as schools, community centers or churches. In the case of a disaster, they may occur at shelters or other points of distribution (PODS). Local pharmacists may be asked to participate in mass immunization programs. When implementing a mass immunization program, it is critical to have a plan in place before it is needed.¹⁸ When developing a plan for mass immunization some specific issues to consider include:

- Ensure there is a comprehensive injection procedure, including availability of an adequate supply of sharp containers.
- Develop a plan for proper disposal of waste. Is it to be incinerated, buried, or burned?
- Ensure traceability of vaccine by lot number and manufacturer.
- Train all staff in proper sterile technique.
- Ensure that you have adequate number of staff and volunteers for each immunization site.
- Monitor for adverse effects from vaccine administration.
- Document all vaccine administrations using an immunization record or electronic immunization system.
- Have all necessary forms required. This includes Vaccine Information Sheet (VIS) for each vaccine, screening questionnaire and immunization record. These forms can be downloaded from the Centers for Disease Control at www.cdc.gov/vaccines/recs/default.htm.

When planning a mass immunization program, it may be helpful to develop a workflow plan that can help to determine how many staff and volunteers will be needed for each injection station and screening station.

PLANNING AND PROTOCOL DEVELOPMENT

As described earlier, it is very important for institutional and community pharmacists to be ready for emergencies, natural or man-made. Each pharmacist should have a clear understanding of what current disaster-preparedness protocols are in place for their pharmacy and what procedures should be established. Many hospitals have practices developed for specific types of disasters, and community pharmacies may want to review these protocols when developing their own. Pharmacy corporate staff may have specific procedures in place. Be sure that emergency plans are properly posted in the pharmacy and that the staff is trained in what to do in the case of a disaster.

The State of Maryland conducted a survey to determine what the pharmaceutical surge capabilities were in their State. The goal of the survey was to determine the pharmaceutical readiness of hospital pharmacies in Maryland for chemical, biological or radiological threats. The survey determined that the pharmaceutical reserves were distributed unevenly throughout the state. Most hospital pharmacies had participated in a hospital disaster drill and had a protocol in place for requests to SNS. A significant percentage of hospitals expected to receive assistance from the SNS within 48 hours (60%). Although the SNS will be available to many locations within 12 hours to replenish initial stock, additional inventory may not arrive for 24 to 36 hours. The pharmacy should have a plan in place to deal with potential inventory needs through a memorandum of understanding with wholesalers and suppliers.¹⁹

PREPARING AGAINST BIOLOGICAL WEAPONS

One component of the pharmacist's role in emergency preparedness is to provide up-to-date drug information regarding proper antibiotic therapy in the event of a biological threat. Pharmacists should regularly review the recommendations from the Center for Disease Control for managing biological exposures and keep the recommendations available in the event that another healthcare professional requires information on how to treat a patient. Information can be found at the CDC website at www.emergency.cdc.gov/bioterrorism/. This website lists the current recommendations for treatment or post-exposure prophylaxis of biological agents.

Another website that is useful is the US Army Medical Research Institute of Infectious Disease at www.usamriid.army.mil/education/bluebook.htm.²⁰

In 2001, there were reports of anthrax used as a biological weapon. These cases were reported to be either inhalational or cutaneous anthrax. There were 15 cases and 3 deaths. In addition to treatment of these victims, the CDC recommended post-exposure prophylaxis to individuals at each of the worksites where the events occurred. During this period, there was widespread panic that resulted in individuals hoarding antibiotics in the event that there was a more widespread attack. It is important for pharmacists to educate the public about hoarding of antibiotics and calm their fears.²¹

In the event of exposure to anthrax, the following therapy is recommended.

Category	Therapy	Duration
Inhalational Anthrax		
Adult	<p>Ciprofloxacin 400 mg IV every 12 hours or doxycycline IV 100 mg every 12 hours.</p> <p>Combine with 1 to 2 additional agents that have <i>in vitro</i> activity against <i>B anthracis</i>. (rifampin, vancomycin, penicillin, ampicillin, chloramphenicol, imipenem, clindamycin and clarithromycin)</p> <p>Do not use penicillin or ampicillin alone due to resistance.</p>	<p>Continue therapy for a total of 60 days. Switch to oral therapy when appropriate.</p> <p>Ciprofloxacin 500 mg PO BID OR Doxycycline 100 mg PO BID</p>
Children	<p>Ciprofloxacin 10 to 15 mg/kg IV every 12 hours (Do not exceed 1 gram/day) OR Doxycycline > 8 yrs and > 45 kg: 100 mg IV every 12 hours > 8 yrs and ≤ 45 kg: 2.2 mg/kg IV every 12 hours ≤ 8 yrs : 2.2 mg/kg IV every 12 hours And 1 or 2 additional agents with activity against <i>B anthracis</i>.</p>	<p>Continue for a total of 60 days. May switch to oral therapy when appropriate.</p> <p>Ciprofloxacin 10 to 15 mg/kg PO every 12 hours (not to exceed 1 gram/day) OR Doxycycline > 8 yrs and > 45 kg: 100 mg PO BID > 8 yrs and ≤ 45 kg: 2.2 mg/kg PO BID ≤ 8 yrs : 2.2 mg/kg IV PO BID</p>
Pregnant or immunocompromised individuals	Administer same dose and duration as non-pregnant and non-immunocompromised adults and children.	Continue for a total of 60 days. May switch to oral therapy using same dose for non-pregnant or non-immunocompromised adults and children

Category	Therapy	Duration
Cutaneous Anthrax		
Adults	Ciprofloxacin 500 mg BID OR Doxycycline 100 mg BID	Administer for a total of 60 days
Children	Ciprofloxacin 10 to 15 mg/kg every 12 hours (Do not exceed 1 gram/day) OR Doxycycline > 8 yrs and > 45 kg: 100 mg every 12 hours > 8 yrs and ≤ 45 kg: 2.2 mg/kg every 12 hours ≤ 8 yrs : 2.2 mg/kg every 12 hours	Administer for a total of 60 days
Pregnant women	Ciprofloxacin 500 mg BID OR Doxycycline 100 mg BID	Administer for a total of 60 days
Immunocompromised individuals	Administer same dose and duration as non-immunocompromised adults and children.	Administer for a total of 60 days

Other agents that have been reported as potential biological threats are listed in the Table below with recommended treatment.²¹ Consult current recommendations in the event of a biological exposure.

Agent	Treatment	Comments
Plague	Streptomycin 15 mg/kg IM BID OR Gentamicin 5 mg/kg IM or IV one a day for 10 days	Other treatments include Doxycycline 200 mg IV once, then 100 mg IV or PO every 12 hours. Ciprofloxacin 500 mg PO BID (or another quinolone) For meningitis: Intravenous Chloramphenicol 25 mg/kg QID loading dose followed by 15 mg/kg IV QID
Tularemia	Gentamicin 5 mg/kg IM or IV once daily for 10 to 14 days.	Alternative is streptomycin 15 mg/kg IV BID, ciprofloxacin or doxycycline are alternatives
Botulism	Botulinum equine antitoxin for Types A, B and E available from CDC. Administer 10 ml vial diluted 1:10 in 0.9% sodium chloride. Give by slow IV administration.	
Viral hemorrhagic fever	No established treatment. Ribavirin IV has been used effectively in Lassa Fever	
Smallpox	Smallpox vaccines are contained in the Strategic National Stockpile for distribution in the event of exposure. Vaccine is administered via scarification by trained individuals.	The site of vaccination is the upper arm over the insertion of the deltoid muscle.

ACTIVE LEARNING EXERCISES (SCENARIOS)

1. Jackson Pharmacy is one of the local community pharmacies in a town of 34,000 people. Susan Jackson, the pharmacist, is interested in working with the Town Council to increase influenza vaccines this flu season. She presented her idea for a Flu Shot Event at the local community center to the Town Council last week. She was just notified of approval to move forward with the project.

Steps that Susan needs to take to implement her Flu Shot Event include:

- Have a plan to dispose of waste, including an adequate number of sharps containers.
- Be sure staff is trained to administer flu vaccines and that there is an adequate number of staff. Generally 1-2 greeters to direct patient flow, 2-3 staff to register patients, 2 staff at each injection station, 1-2 staff to monitor for adverse events.
- Have all necessary forms (Vaccine Information Sheet), screening questionnaire, and immunization record ready for each patient.
- Ensure that vaccine lot number and manufacturer are documented on each patient's immunization record in case product needs to be traced.
- Document each vaccine using an immunization record.
- Train staff in aseptic technique; review prior to event.
- Review Community Center layout to determine most efficient workflow plan.
- Identify someone to be in charge of waste disposal, follow appropriate guidelines.
- Market Flu Shot Event to local physicians, community groups, businesses to promote participation.
- Develop options for physically disabled patients who may need assistance getting to Flu Shot Event.
- Provide adequate signage for patients to locate Event.

2. John is a pharmacist at a pharmacy located in the upper Midwest. He was reading about the problems pharmacists encountered in Hurricane Katrina and realizes he has no emergency plan in case of tornado, flood or winter weather. John wonders what resources he can consult to put a plan together. These may include:

- APhA Emergency Preparedness at www.aphanet.org/pharmcare/ResponseCenter.htm.
- Center for Disease Control website for emergency preparedness www.cdc.gov.
- Local Community Disaster Plan or local hospital pharmacy Emergency Protocol.
- Contact other pharmacists in area to determine what plans they have in place.

John needs to consider how his pharmacy will be impacted if the electricity goes out? What are John's concerns?

- Is there a backup process for filling or refilling prescriptions without a computer system? Is there a process for written documentation of dispensing activities?
- How will controlled substances be dispensed during a blackout?
- What is the stability of medications once they are removed from a refrigerator or freezer? John can prepare a list with each product's stability at room temperature and tape the chart to the refrigerator for easy access. Also be sure there are coolers and/or portable generators for short term outage.
- Are there security issues that need to be considered to protect the integrity of the inventory?

3. Patricia is looking for ways to expand the services offered to the community in her pharmacy. She has recently completed immunization training and is now certified to administer vaccines. What are some ideas that Patricia could consider to promote her programs?

- Focus on the need to improve immunization rates. Reinforce that the CDC has expanded recommendations for influenza vaccine. Current recommendation is for ALL individuals over 6 months of age.
- Promote the program to local physicians, physician assistants and the local hospital as a convenient alternative for patients.
- Take out an advertisement in the local newspaper promoting the available hours for vaccines or consider local

radio advertising. Include information on pharmacy website.

- Schedule a presentation at the local businessman lunch or church event.
- Consider scheduling vaccine clinics for local nursing homes, assisted living centers, or community colleges.

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

1. American Pharmacists Association www.aphanet.org/pharmcare/ResponseCenter.htm.
2. American Red Cross (ARC) www.redcross.org.
3. Federal Emergency Management Agency (FEMA) www.fema.gov
4. National Stockpile-Centers for Disease Control and Prevention www.bt.cdc.gov/stockpile.
5. American Society of Health-System Pharmacists www.ashp.org/emergency.

APPENDIX A

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

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FUTURE TOPICS

- HIV/AIDS Update
- Role of Pharmacist in Pharmacogenetics
- Barriers to Medication Compliance

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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

	Poor		Average		Excellent		
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)

- | | |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>1. Medications donated to an emergency setting:
 A. Must be checked for expiration date
 B. May not have been stored properly
 C. May not be useful in the current disaster
 D. All of these</p> <p>2. When a pharmacist is working as a first responder:
 A. Limit shifts to 12 hours
 B. Limit shifts to 4 hours
 C. Do not take a break during your shift
 D. Focus on completing one task at a time</p> <p>3. Pharmacist first responders should have a personal disaster plan:
 A. To ensure they & their family are safe
 B. To be better prepared to focus on their first responder duties
 C. To be clear about what to do in specific disaster scenarios
 D. All of these</p> <p>4. The SNS is maintained by:
 A. Department of Justice
 B. Department of Transportation
 C. Center for Disease Control
 D. FEMA</p> <p>5. The National Pharmacy Response Team program consists of 25 regional teams.
 A. True B. False</p> | <p>6. In a pandemic what % of the workforce is expected to be out due to illness?
 A. 10%
 B. 30%
 C. 40%
 D. 55%</p> <p>7. Disaster related environmental factors that are common in the elderly include:
 A. Dehydration
 B. Hypothermia
 C. Infectious diseases
 D. All of these</p> <p>8. It is important to prepare the elderly for potential disaster, since over 60% of Hurricane Katrina victims were age 61 or older.
 A. True
 B. False</p> <p>9. Pharmacists should develop policies for potential emergency situations, realizing that even with policies, there may not be an answer.
 A. True
 B. False</p> <p>10. National Pharmacist Response Team reports to:
 A. Federal Emergency Management Service
 B. Center for Disease Control
 C. Department of Health & Human Services
 D. None of these</p> |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

Contributing Author

Mary Lynn Moody, BS Pharm
Clinical Assistant Professor
Director, Business Development
Drug Information Group
University of Illinois, Chicago
College of Pharmacy

Executive Editor

William J. Feinberg,
BS Pharm, MBA



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