

Emergency Preparedness Pharmacists, Technicians as First Responders

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Objectives

- **Learning Objective (Pharmacist)**
 - Describe the NIMS system & its team approach, using pharmacists as partners.
 - Describe the pharmacist's role during several types of emergency incidents.
 - Describe the pharmacist's role in the Cities Readiness Initiative (CRI)
- **Learning Objectives (Pharmacy Technician)**
 - Describe the NIMS system & its team approach functions.
 - Describe the pharmacy technician's role during emergency incidents.
 - Describe the technician's role, Medical Reserve Corp (MRC) during an incident.

Disasters

- Disasters may be the consequence of human intent (terrorism), unintended results of human activity (accidents), or natural occurrences.



Point of dispensing (POD)



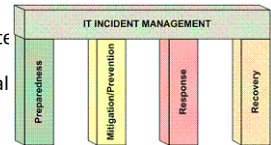
Flooding on Monday



HazMat decon for Anthrax scare

Terminology used in Incident Management

- **Mitigation/ Prevention**
 - Measures employed before an incident occurs to reduce damage
- **Preparedness**
 - Activities that are conducted to improve readiness before a disaster
- **Response**
 - Actions that deal with the consequences during a disaster
- **Recovery**
 - Procedures that help normal business operations



Influencing Factors in a Disaster

- Unintended but contributing consequences of human activity have altered the environment and increased our vulnerability
- Atmospheric changes increase the probability of a major disaster and altered ecosystems limit natural defenses resulting in greater destruction.
- Human effects on the environment increase both the probability for disasters and our vulnerability



Magnitude of Disasters

Increase in frequency of larger disasters

- Szechuan earthquake- almost 70K killed
- Tsunami in Indonesia and SE Asia kills nearly 250K
- 1979 Anthrax accidental release in Sverdlovsk killed 60 but changed the world of biological warfare
- 2010 Haiti earthquake kills nearly 100K
- 9-11 killed 2996
- Chernobyl has claimed over 1 million lives since 1986
- Union Carbide chemical plant accident in Bhopal in 1984 killed 3787



Who is Impacted the Most?

- The majority of these threats will occur on a **local level**, affecting a defined community that may be unable to meet demands and rapidly become overwhelmed
- Regardless of the cause, the end product and our roles and responsibilities are the same, to minimize the loss of life



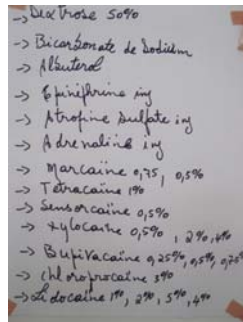
Disaster Impact

- Disasters impact our health, community, and economy; they devastate the environment and significantly disrupt our daily life.
- The fundamental goals of disaster mitigation are to understand and define the threat, limit our vulnerabilities, prevent the occurrence when possible, and minimize the effects and losses when they arise



We are there...Where are you?

- Aids from all over the world reached the site with millions of USD in term of medication
- Doctor, nurses, other volunteers...
- But where are the pharmacists?
- Drugs – a lot of almost expired or expired drugs
 - Pharmacotherapy- choice of drugs for specific conditions
 - Pharmacokinetics – not even focus due to lack of expertise



You are Soooo Needed

- Many healthcare providers mainly doctors and nurses contributed significantly during the catastrophe.
- Unfortunately the role of pharmacist remains unclear- So far the involvement of pharmacists in this issue seems to be almost none
- Contribution of pharmacist's expertise should be there, as in most disasters, drugs are being used regularly and the counseling during such event almost not exist.



How Do We Find You in a Disaster?

National Response Framework (NRF)
Developed as per Homeland Security Presidential Directive (Second Version post Katrina)

- Purpose
 - Align federal coordination structures, capabilities, and resources
- Goal
 - Improve coordination among federal, state, local and tribal organizations
- Template: National Disaster Medical System (NDMS)

NIMS and NRF

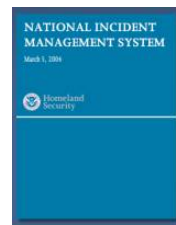
<http://www.fema.gov/emergency/nrf/>

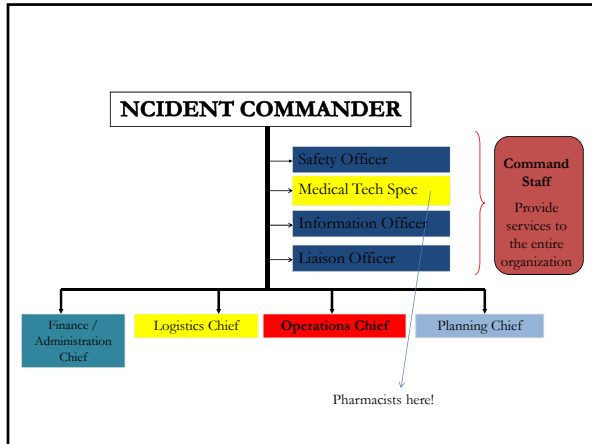
- NIMS: Standardizes incident management processes, protocols, and procedures for use by all responders. Mandates use of ICS.



NRF: Establishes . . .

- Federal coordination structures/mechanisms.
- Direction for incorporation of existing plans.
- Consistent approach to managing incidents.





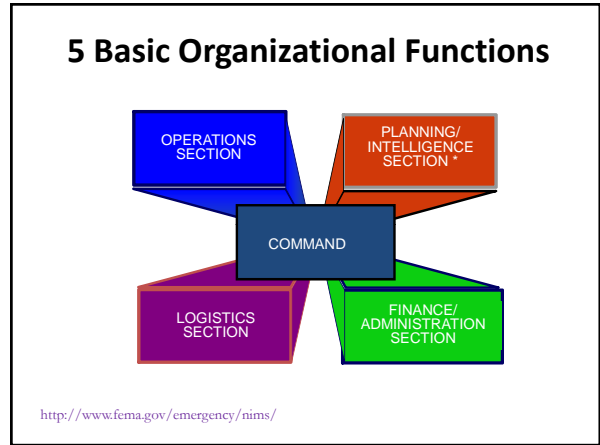
National Incident Command System (NIMS)

- What it IS...
 - Organizational core of a crisis management system
 - Universal link with outside resources
 - Early planning for transition to consequence management
 - Management system designed to integrate resources from numerous organizations into a single response structure using common terminology and processes
- What it is NOT...
 - A complete, ready-to-go, "disaster plan"

<http://www.fema.gov/emergency/nims/>

Why Use ICS?

- Predictable chain of management
- Improved documentation for improved accountability and cost recovery
- Flexible organizational chart allows flexible response to specific emergencies
- Common language to promote communication and facilitate outside assistance
- Prioritized response checklists
- Cost effective emergency planning within health care organizations
- Accountability of position functions



National Pharmacy Response Team (NPRT)

- Includes pharmacists, pharmacy technicians, pharmacy students
- Goal: assist in chemoprophylaxis or mass vaccination
- Become temporary federal employee
 - Paid salary
 - Reimbursed for travel and per diem expenses
 - Liability coverage outside of state of licensure
 - Deployed for no longer than 2 weeks
- Required to complete web-based training program, be current with treatment recommendations
- <http://ndms.fema.gov/teams/nprt.html>

Centers for Disease Control and Prevention

- Prepare and respond to public health emergencies
- Conduct investigations into health effects and medical consequences
- Assess health and medical needs of disaster victims
- Develop and maintain national systems for acute environmental hazard surveillance
- Provide epidemiologic, laboratory and other scientific services to agencies involved in disaster planning and response

<http://www.in.gov/isdh/bioterrorism/manual/image43.gif>

Strategic National Stockpile (SNS)

- Managed by CDC
- National repository of antibiotics, chemical antidotes, antitoxins, life-support medications, medical/surgical supplies
- Antidotes

<http://www.cdc.gov/phpr/stockpile/stockpile.htm>



- Goal: Ensure rapid delivery within 12 hours
- 3 main components
 - 12 hour push packages
 - Enough drugs per packet to treat >100,000 people
 - Vendor-managed inventory
 - CDC maintains supply of chemical



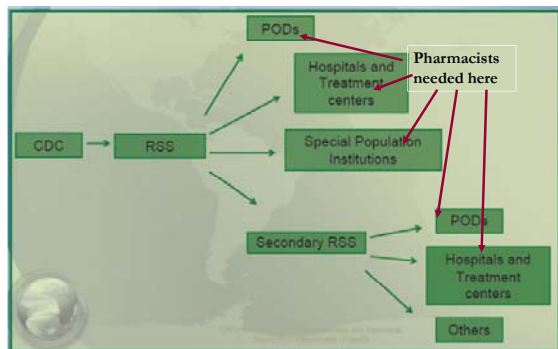
SNS

- Can be requested by the state and shipment begin within 12 hours pending federal government approval
- State responsible to provide manpower to disassemble packaging and transport pharmaceuticals
- Must factor in time to distribute
- Role of pharmacy personnel
 - Ensure proper storage
 - Provide recommendations for therapeutic alternatives
 - Patient screening and triage
 - Dispensing of pharmaceuticals
 - Immunizations
 - Patient counseling and compliance
- May extend expiration date



<http://www.hhs.state.nc.us/images/BT/nps.jpg>

How will the medicine be distributed from the SNS to the people?



Here is what we'll need:

- Enough medications, vaccinations, supplies, etc. to treat the desired population
- Many locations for the general public to visit and pick up their supplies, like parks, schools, etc. know as Points of Dispensing or PODs
- People to help including Pharmacists and Pharmacy technicians
- Volunteers, volunteers and more volunteers.



Here is what we'll need:

Pharmacists will oversee the dispensing of medications, including screening, mixing, & flow patterns to keep the crowds moving.



...And the most critical ingredient:

VOLUNTEERS

LOTS & LOTS of VOLUNTEERS

Just how many volunteers will we need?
A simple equation can answer that for us:



$$H(s) = \int_0^{\infty} e^{-st} h(t) dt \quad C \frac{dV_{out}}{dt} = I_b \tanh\left(\frac{\kappa(V_{in} - V_{out})}{2}\right)$$

Real Answer: Many!



But...if you are going to distribute, do it right the first time! Plan and Prepare!



Medical Reserve Corps

- <http://www.medicalreservecorps.gov/detail.asp?id=59> in Broward County
- Nationwide:
<http://www.medicalreservecorps.gov/HomePage>
- **Volunteer Count:** Physicians 114 Physician Assistants 23 Nurse Practitioners 50 Nurses 706 Pharmacists 32 Dentists 16 Veterinarians 2 Mental Health Professionals 145 EMS Professionals 129 Respiratory Therapists 25 Other Public Health/Medical 505 Non-Public Health/Non-Medical 169 **Total 1916**



What's in it for YOU!

- First hand knowledge of what's happening!
- First line prophylaxis for you and family members!
- Satisfaction that you trained, you learned and now you are helping so many others!



ASHP Statement on the Role of Health-System Pharmacists in Emergency Preparedness

- **Pharmacists should play a key role** in planning and execution of
 - Pharmaceutical distribution and control
 - Drug therapy management of patients
- **Be involved** in the following
 - Development of guidelines
 - Selection of pharmaceuticals and supplies for national, regional and local emergency inventories
 - Ensure proper packaging, storage, handling, labeling and dispensing of emergency supplies
 - Ensure proper deployment of emergency supply of pharmaceuticals
 - Ensure appropriate education and counseling
- Advise public health officials on appropriate messages to convey to the public
- Collaborate with physicians in managing drug therapy

Key Roles of a Pharmacist in Bioterrorism

- Surveillance (ESSENCE)
- Information
- Patient education and counseling
- Distribution of pharmaceuticals and medical supplies
- Administration of vaccines
- Evaluation/Triage
- Community planning and preparation



Key Roles of a Pharmacist in Bioterrorism

- ESSENCE: *Electronic Surveillance System for the Early Notification of Community-Based Epidemics*
- Antibiotic / antiviral usage
- S/S seen with patient contact
- OTC sales
- Dispensing of Rx



Patient Education and Counseling

- Ensure appropriate use and safety
- Prevent toxicities and side effects
- Enable identification of other medical and psychological conditions
- Monitor for safety, efficacy and adherence
- Monitor for side effects



Key Roles of a Pharmacist in Bioterrorism

<p>Drug Name: Penicillin Brand Name: Pen V-K1</p> <p>Use: Treatment of penicillin-susceptible lower and upper airway and skin infections. It also is used to prevent recurrent rheumatic fever and chorea.</p> <p>Storage conditions: Store the tablets at room temperature and away from moisture that will retard their rate of deterioration. From the expiration to the refrigerator (do not transfer) to 14 days after about 8 hours (up to 14 days) at 2-8°C (36-46°F) or as indicated on the package insert.</p> <p>Usual Adult Dose: Take the usual dose as soon as you remember to, or if it is almost time for the next dose. Skip the missed dose and continue your regular dosing schedule. Do not take a double dose to make up for a missed dose.</p> <p>Special Precautions:</p> <ul style="list-style-type: none"> • Tell your doctor if: • You are pregnant, plan to become pregnant, or are breastfeeding. • You become pregnant while taking penicillin. • You are taking other drugs, including other antibiotics. • You are allergic to penicillin or any other medication. <p>Side effects: Common: upset stomach, diarrhea, vomiting, mild skin rash Warnings: If you experience any of these symptoms, call your doctor immediately. Allergic reactions to penicillin, including anaphylaxis, may be fatal.</p>	<p>Drug Name: Tetracycline Brand Name: Tetracycline, TETRACIL (as a combination product)</p> <p>Use: Treatment of penicillin and other organisms that infections are infections of skin caused by staphylococci, streptococci that causes diphtheria (D), pertussis, Lyme disease, ehrlichiosis.</p> <p>Storage conditions: Store at room temperature and away from moisture that will retard their rate of deterioration. From the expiration to the refrigerator (do not transfer) to 14 days after about 8 hours (up to 14 days) at 2-8°C (36-46°F) or as indicated on the package insert.</p> <p>Usual Adult Dose: Take the usual dose as soon as you remember to, or if it is almost time for the next dose. Skip the missed dose and continue your regular dosing schedule. Do not take a double dose to make up for a missed dose.</p> <p>Special Precautions:</p> <ul style="list-style-type: none"> • Tell your doctor if: • You are taking other drugs, including other antibiotics. • You are pregnant, plan to become pregnant, or are breastfeeding. • You become pregnant while taking tetracycline. • You are allergic to tetracycline or any other medication. <p>Side effects: Common: upset stomach, diarrhea, vomiting, mild skin rash Warnings: If you experience any of these symptoms, call your doctor immediately. Allergic reactions to tetracycline, including anaphylaxis, may be fatal.</p>	<p>Drug Name: Amoxicillin Brand Name: Amoxil</p> <p>Use: Treatment of penicillin-susceptible, gram-positive and gram-negative infections of the ear, nose, throat, upper respiratory tract, and skin. It is also used in combination with other medications to enhance its effect in a variety of bacterial infections.</p> <p>Storage conditions: Store the tablets and capsules at room temperature and away from moisture that will retard their rate of deterioration. From the expiration to the refrigerator (do not transfer) to 14 days after about 8 hours (up to 14 days) at 2-8°C (36-46°F) or as indicated on the package insert.</p> <p>Usual Adult Dose: Take the usual dose as soon as you remember to, or if it is almost time for the next dose. Skip the missed dose and continue your regular dosing schedule. Do not take a double dose to make up for a missed dose.</p> <p>Special Precautions:</p> <ul style="list-style-type: none"> • Tell your doctor if: • You are pregnant, plan to become pregnant, or are breastfeeding. • You become pregnant while taking amoxicillin. • You are allergic to amoxicillin or any other medication. <p>Side effects: Common: upset stomach, diarrhea, vomiting, mild skin rash Warnings: If you experience any of these symptoms, call your doctor immediately. Allergic reactions to amoxicillin, including anaphylaxis, may be fatal.</p>
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BROWARD HEALTH EMERGENCY PREPAREDNESS

Information

- Remain calm and provide reassurance
- Be assertive
- Educate public, media and health professionals
- Prevent irrational behavior
- Obtain medication history and allergies



Distribution of Pharmaceutical and Medical Supplies

- Obtain extra pharmaceuticals from wholesalers
- Keep medications organized and under close supervision
- Maintain security of controlled substances
- Package and label appropriately
- Prepare drugs onsite
- Monitor usage of drugs and predict which drugs need to be ordered



Administration of Vaccines

- Role of pharmacist is moving from distributor of vaccines to administrator of vaccines
- Pharmacists must be trained and educated in the technique of providing immunizations
- Growing number of pharmacists who are certified to immunize
- Target vaccines associated with bioterrorism:
 - Smallpox
 - Anthrax

Community Planning and Preparation

- Contact local and state public health and emergency medical officials to become part of emergency response team
- Coordinate actions with state board of pharmacy
- Contact prescription drug benefit plans regarding protocols for emergency re-fills
- Set up a handbook of contact information
 - Wholesalers, distributors, manufacturers, communications companies



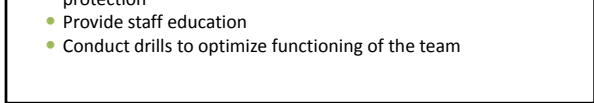
Community Planning and Preparation

- Develop list of drugs, biologicals, supplies, nutritionals for emergency shelters
- Contact list of company representatives to assist in obtaining drugs/supplies
- Create a list of pharmacists you can call upon for assistance
- Prepare an emergency kit
- Have bioterrorism resources readily available (Internet, PDA)



Pharmacy Emergency Response Team (PERT)

- Trained to respond to chemical, biological, radiological, and nuclear agents
- Identify a lead pharmacist and set responsibilities for team members
- Involvement of pharmacy director, administrative support, clinical pharmacists
- Establish collaboration and coordination of the role pharmacy has in disaster management
- Set procedures for emergency cart fills
- Resources are provided for efficient communication and protection
- Provide staff education
- Conduct drills to optimize functioning of the team



How to Prepare

- Develop an extensive emergency plan
- Know federal and local disaster management plans
- Enhance the link between pharmacy and first responders, medical and mental health services, public health officials, law enforcement officers
 - Develop a local network of pharmacists, EMS, physicians
 - Regional poison control center
 - State and local agencies
 - Local and state professional associations
 - State emergency management groups



How to Prepare: Be Educated and Trained

- Become familiar with agents of concern, their treatment, prophylaxis and epidemiology
- Take training classes in emergency preparedness
- Learn first aid and become certified in cardiopulmonary resuscitation (CPR) and advanced cardiac life support (ACLS)



How to Prepare: Get Involved

- Develop the following
 - Antibiotic selection guidelines
 - Dosing charts for pediatric patients
 - Counseling information
 - Immunization guidelines (especially for high risk patients)
 - Post exposure prophylaxis recommendations both primary and secondary exposure
- Assist in writing pharmaceutical distribution plans
- Take part in development of guidelines or treatment algorithms in management of patients exposed to bioterrorism
- Work with wholesalers to develop plans to obtain emergency pharmaceuticals



How to Prepare: Get Involved

- Teach other pharmacists, nurses, and medical professionals
- Become certified to administer vaccines
- Develop programs for mass prophylaxis focusing on issues of drug security, triage of patients, and counseling
- Take part in practice drills or training exercises
 - Federal government can send training, education and demonstration (TED) packages

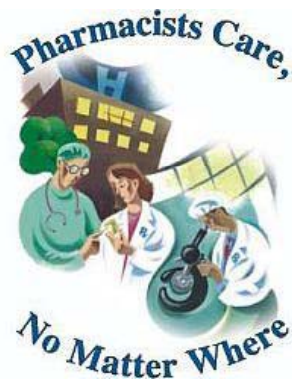


Conclusion

- Pharmacists are identified as being an active participant in the preparation and response to events related to bioterrorism
- Pharmacists need to be educated and be actively involved
- Utilize the available resources
- Be available to volunteer assistance



Questions???



Resources

- American Society of Health-System Pharmacists
 - <http://www.ashp.org/emergency/>
- American Pharmaceutical Association (APhA) Pharmacist Response Center
 - <http://www.aphanet.org/pharmacare/responsecenter.htm>
- American Medical Association
 - <http://www.ama-assn.org/ama/pub/category/6206.html>
- Centers for Disease Control (Bioterrorism preparedness and response)
 - www.bt.cdc.gov
- John Hopkins University for Civilian Biodefense Strategies
 - <http://www.upmc-biosecurity.org/>
- Federal Emergency Management Agency
 - <http://www.fema.gov>
- U.S. Food and Drug Administration
 - <http://www.fda.gov/oc/opacom/hottopics/bioterrorism.html>
- National Disaster Medical System
 - <http://www.oep-ndms.dhhs.gov/>



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Do You Know?

- The Strategic National Stockpile (SNS) is a Federal program that will assist pharmacists with a cache of supplies, pharmaceuticals, antidotes within how many hours following a disaster request?

1. 24 hours
2. 36 hours
3. 8 hours
4. 12 hours

And the Answer is....

- **D. 12 hours**
- – but The Joint Commission in the EM standards says you have to have a plan for 96 hours!

Another Question

- Only Weapons of Mass Destruction (WMD) incidents involving biological, chemical, or radiological agents would require the expertise of pharmacists as first responders.
 - a. False
 - b. True

And the Next Answer is....

- a. False

A Pharmacist is needed in a WMD event and so many other non-terrorist event such as weather related (hurricanes, tornadoes, floods), natural disasters (ice storms, wild fires) etc. Anytime the health of a population is in question then a pharmacist is needed, desired, and loved!