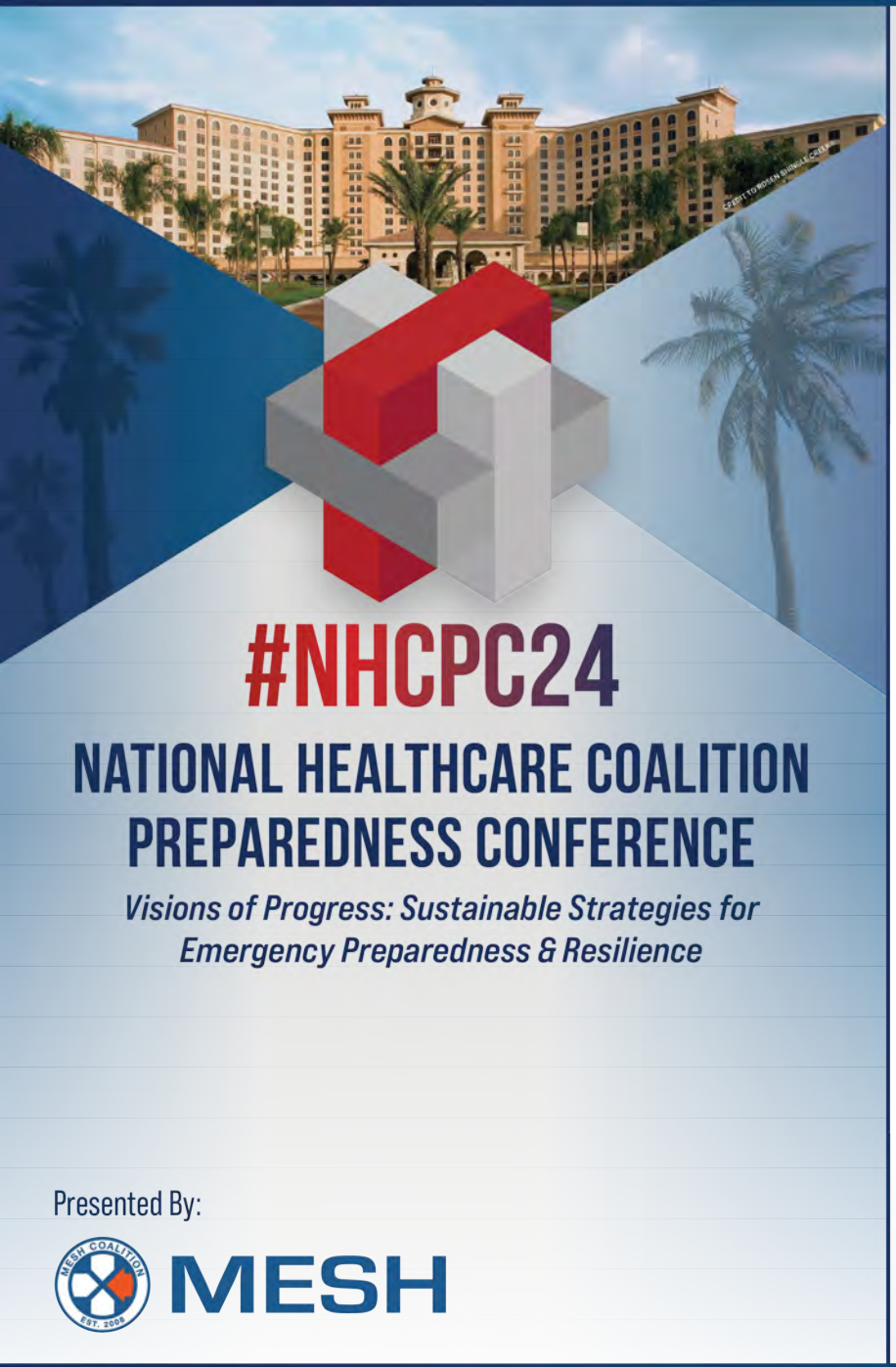

Strategies for Including Poison Center and Pharmaceutical Expertise into HCC Planning

- Kathy Jacobitz, MHA, BSN, RN, CSPI
  Director, Nebraska Poison Center
- Justin Watson, MPA
  Coordinator, Omaha Metropolitan Healthcare Coalition

We will discuss…

- Overview of the Omaha Metropolitan Healthcare Coalition
- Development of the OMHCC Chemical Annex
- Overview of Poison Centers
- Regional Disaster Health Response Systems
- R7DHRE Chemical Specialty Team
- Role of the OMHCC Pharmacy Workgroup
- Response to real world incidents and exercises through partnerships with OMHCC, Nebraska Poison Center, and the R7DHRE Chemical Team

Mission:

Promote community healthcare coordination and resilience.

Vision:

Promote community healthcare coordination and resilience by bringing together the medical community, emergency management agencies, public health departments, emergency medical services, and other community stakeholders to plan for a coordinated medical response to any potential incident.

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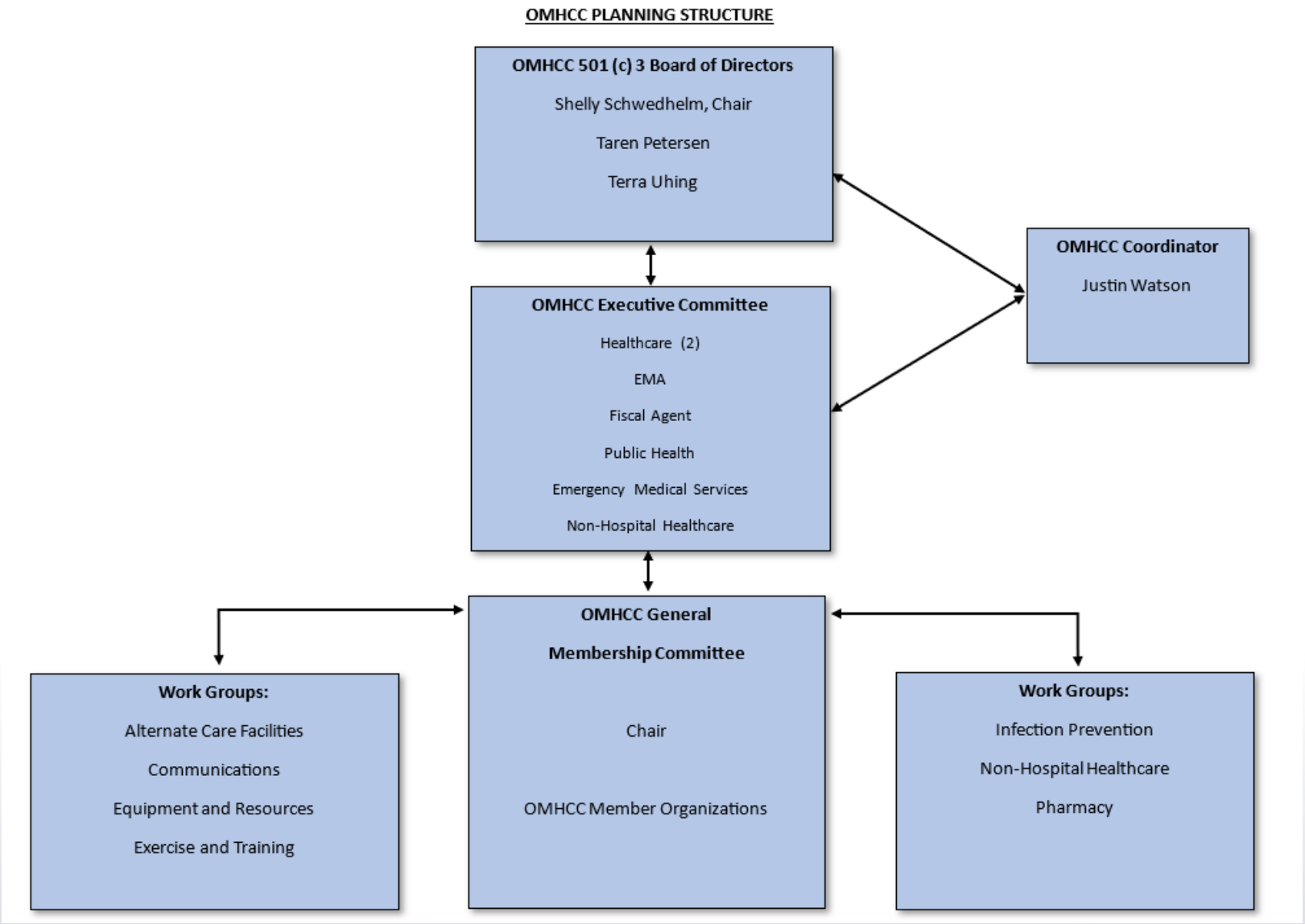
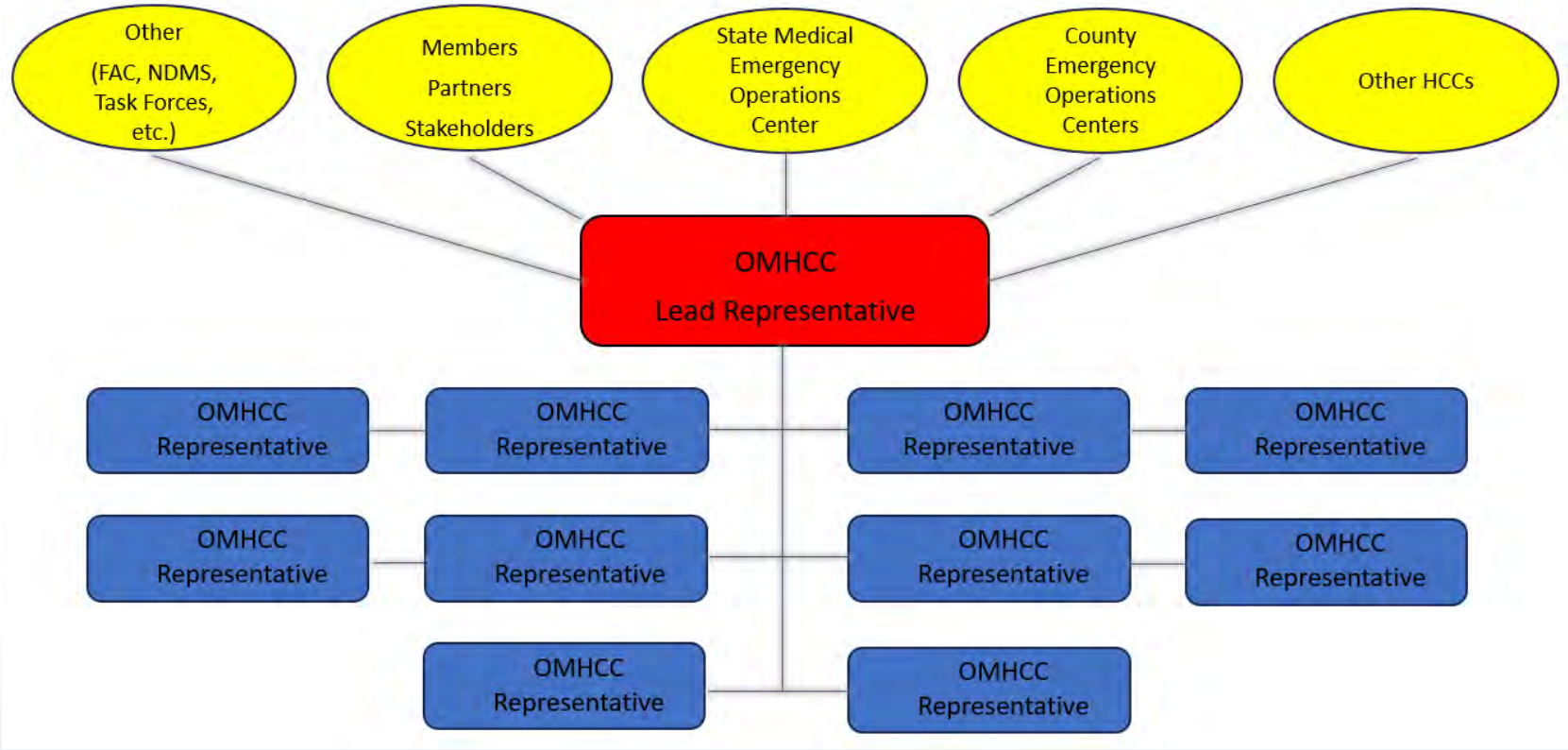
OMHCC Response

- Information sharing
- Facilitate resource sharing
- Act as a liaison between healthcare and jurisdictional authorities
- Facilitate response discussions

Day to Day Structure



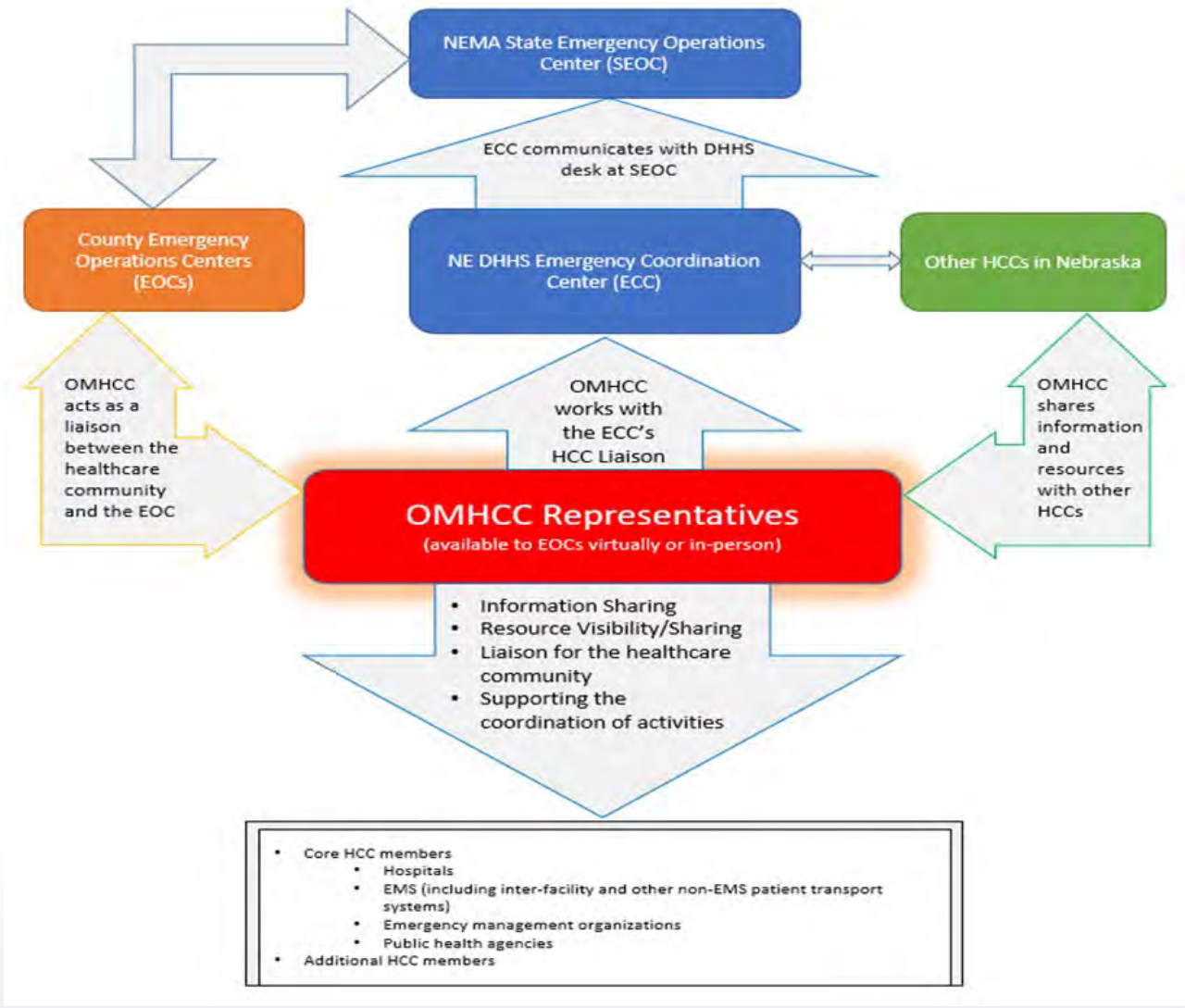
OMHCC Representative Structure



OMHCC Representatives

1. Justin Watson, OMHCC Coordinator
2. Roberta Coffman, Executive Committee Chair, Children's Nebraska
3. Val Goodman, OMHCC Volunteer
4. Brian Smith, Nebraska Methodist Health System
5. Shelly Schwedhelm, Nebraska Medicine
6. Dr. Anna Fisher, Hillcrest Health Services
7. Curtis Friedrich, CHI Health Lakeside/Midlands
8. Patti Motl, Medical Reserve Corps
9. Lori Jensen, OrthoNebraska

Another Viewpoint



OMHCC's New Plans

OMHCC Administrative Plan and Procedures

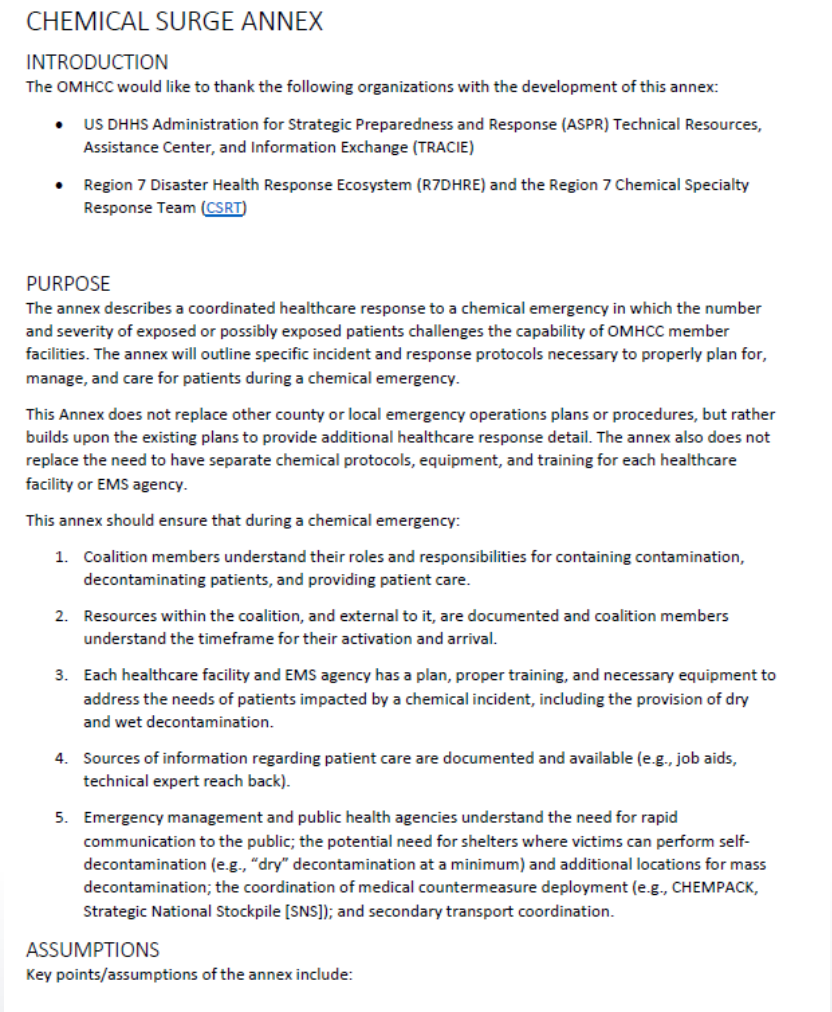
OMHCC Response Plan

Major Changes:

- Adding hyperlinks to help navigate the documents and easily find what you are looking for.
- No activation levels. OMHCC is either activated or not activated for a response.
- Removing many attachments that will be referenced as "on file" with the OMHCC Coordinator.
- A lot of formatting changes – more condensed.
- Removed some repetitive information and information we are unsure of (i.e., amateur radio).

OMHCC Chemical Annex

- R7DHRE Template (based on ASPR TRACIE Template) given to HCCs.
- HCCs modified for their own region.
- OMHCC developed several drafts before the final.
- Several SMEs involved in development.
- Follows structure of other annexes and ASPR TRACIE templates.
- Several links to outside resources and other parts of the OMHCC Response Plan.



CHEMICAL SURGE ANNEX

INTRODUCTION

The OMHCC would like to thank the following organizations with the development of this annex:

- US DHHS Administration for Strategic Preparedness and Response (ASPR) Technical Resources, Assistance Center, and Information Exchange (TRACIE)
- Region 7 Disaster Health Response Ecosystem (R7DHRE) and the Region 7 Chemical Specialty Response Team (CSRT)

PURPOSE

The annex describes a coordinated healthcare response to a chemical emergency in which the number and severity of exposed or possibly exposed patients challenges the capability of OMHCC member facilities. The annex will outline specific incident and response protocols necessary to properly plan for, manage, and care for patients during a chemical emergency.

This Annex does not replace other county or local emergency operations plans or procedures, but rather builds upon the existing plans to provide additional healthcare response detail. The annex also does not replace the need to have separate chemical protocols, equipment, and training for each healthcare facility or EMS agency.

This annex should ensure that during a chemical emergency:

1. Coalition members understand their roles and responsibilities for containing contamination, decontaminating patients, and providing patient care.
2. Resources within the coalition, and external to it, are documented and coalition members understand the timeframe for their activation and arrival.
3. Each healthcare facility and EMS agency has a plan, proper training, and necessary equipment to address the needs of patients impacted by a chemical incident, including the provision of dry and wet decontamination.
4. Sources of information regarding patient care are documented and available (e.g., job aids, technical expert reach back).
5. Emergency management and public health agencies understand the need for rapid communication to the public; the potential need for shelters where victims can perform self-decontamination (e.g., "dry" decontamination at a minimum) and additional locations for mass decontamination; the coordination of medical countermeasure deployment (e.g., CHEMPACK, Strategic National Stockpile [SNS]); and secondary transport coordination.

ASSUMPTIONS

Key points/assumptions of the annex include:

Poison Center Overview

- Mission: Provide timely, quality care for patients exposed to chemicals and other toxic substances
  - 24/7 emergency telephone service
  - Assess poisoning risk and triage patients to most appropriate level of care
  - Provide treatment recommendations to healthcare professionals and public
- Public & professional education
- Toxicosurveillance (National Poison Data System)
- Support public health planning & disaster response
  - OMHCC Pharmacy Workgroup
  - Region VII Disaster Health Response Ecosystem Chemical Specialty Team

Poison Center Staffing

Toxicology Experts

- Board Certified Medical & Clinical Toxicologists
- Nationally Certified Specialists in Poison Information
  - Pharmacists
  - Registered Nurses
  - Physician Assistants
  - Physicians

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Poison Center Access

- National toll-free number
- Poison centers serve:
  - 50 states and District of Columbia
  - U.S. Territories: American Samoa, Guam, Puerto Rico, U.S. Virgin Islands
  - Federated States of Micronesia

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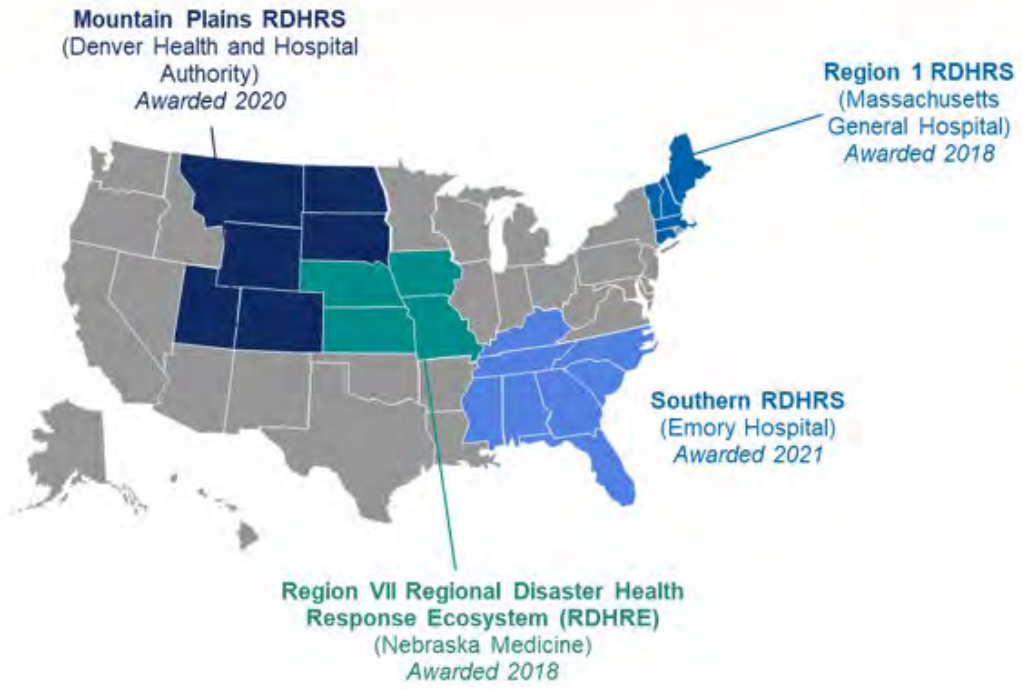
Regional Disaster Health Response Systems

ASPR awarded four disaster response sites to address health care preparedness challenges, establish promising practices for improving disaster readiness across the health care delivery system, demonstrate the potential effectiveness of an RDHRS, and make progress toward building a national system for readiness built on regional collaboration.

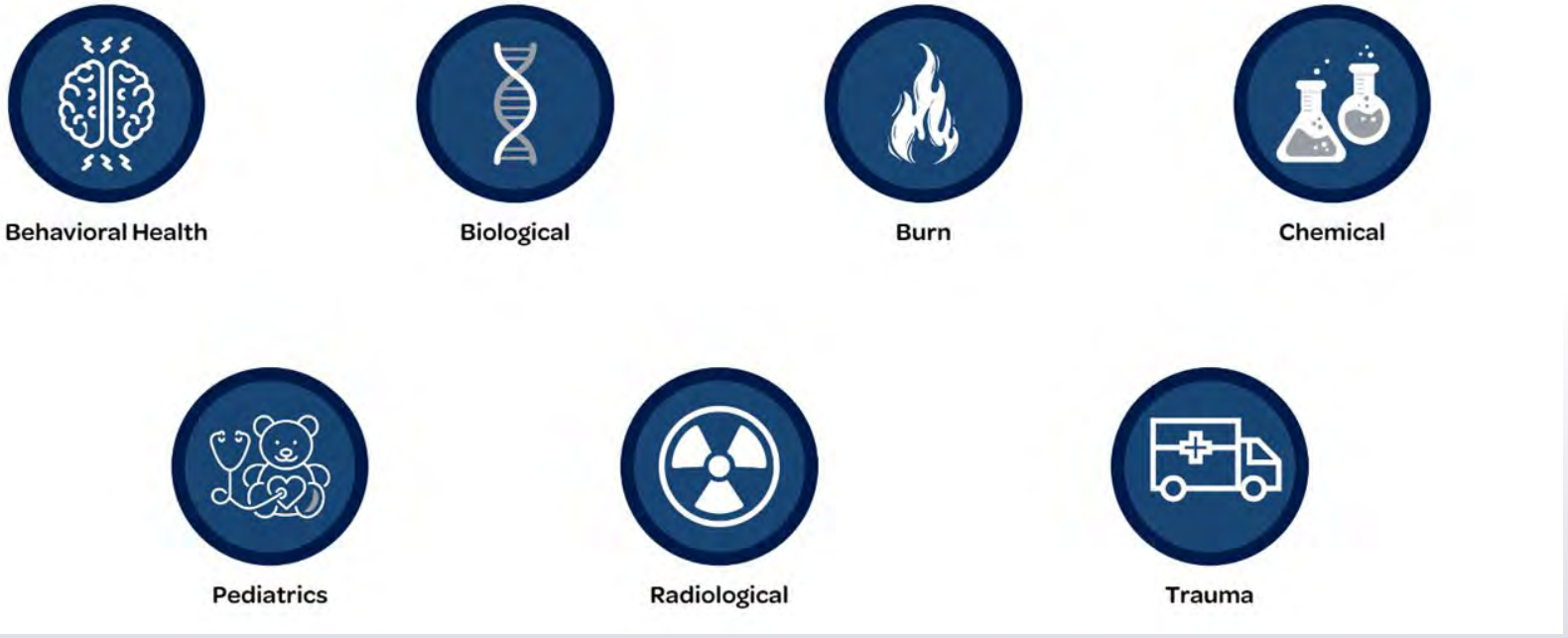


- **Build** a partnership for disaster health response
- **Align** plans, policies, and procedures related to clinical excellence in disasters
- **Increase** statewide and regional medical surge capacity, coordinate regional medical response, expand specialty care
- **Improve** statewide and regional situational awareness
- **Develop** readiness metrics to integrate measures of preparedness
- **Test** capabilities through exercises

Region VII Specialty Teams

Region VII Disaster Health Response Ecosystem

Primary Goal: Bridge the gap between local resources and federal asset arrival. Specialty Teams may deploy or use telehealth or other communication platforms to provide quick subject matter expertise and assistance when an event happens requiring their expertise.



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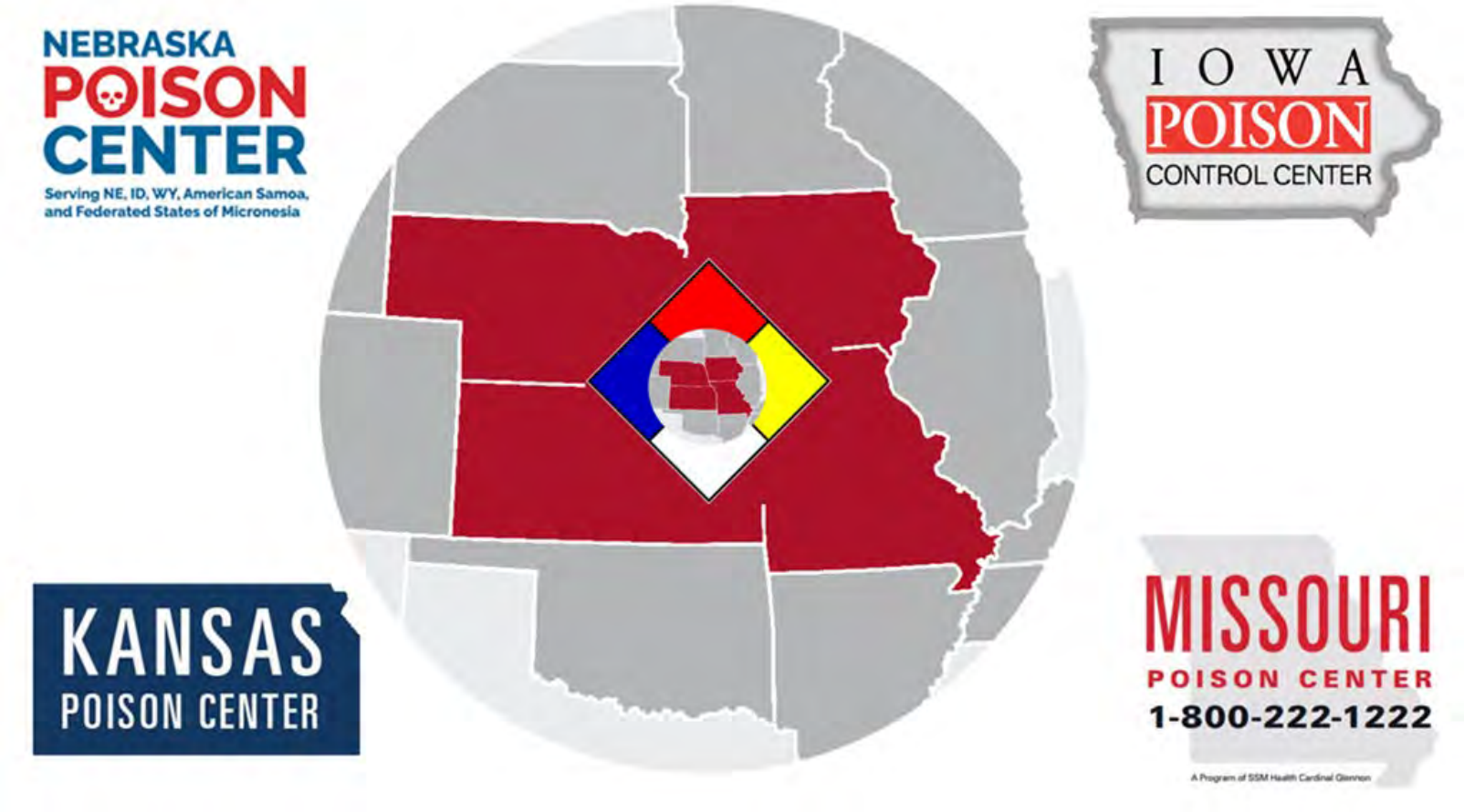
Region VII Chemical Specialty Team



REGION VII
DISASTER HEALTH
RESPONSE ECOSYSTEM

POISON
HELP
1-800-222-1222

#NHCPC24

Poison Centers/RDHRS

- All RDHRS Teams partner with Poison Centers
- Toxicology expertise assists with planning, education, and immediate response to chemical and other hazardous materials incidents
- Presentations on Management of Chemical Exposures
  - Conferences, Webinars
  - Advanced Hazmat Life Support courses
- Regional Chemical Specialty Teams (staffed by Poison Centers)
  - Provide immediate telephone advice
  - Provide advice and training via tele-technology
  - Travel to scene of disaster to assist with patient/event management and training

How Can Poison Centers/Chemical Specialty Teams Help HCCs?

Identify	Identify the hazardous materials involved, based on symptoms and history
Assess	Assess potential toxicity and identify immediate dangers
Triage	Provide triage, decontamination, toxicity information, and treatment recommendations
Treatment	Notify hospitals that are receiving victims and provide patient-specific treatment recommendations
Notify	Notify all area hospitals, local and state public health of the incident; provide clinical guidelines
Antidotes	Provide antidote dosing and administration information
Assist	Assist with locating and transferring antidotes
Provide	Provide on-scene or bedside treatment assistance (depending on location)

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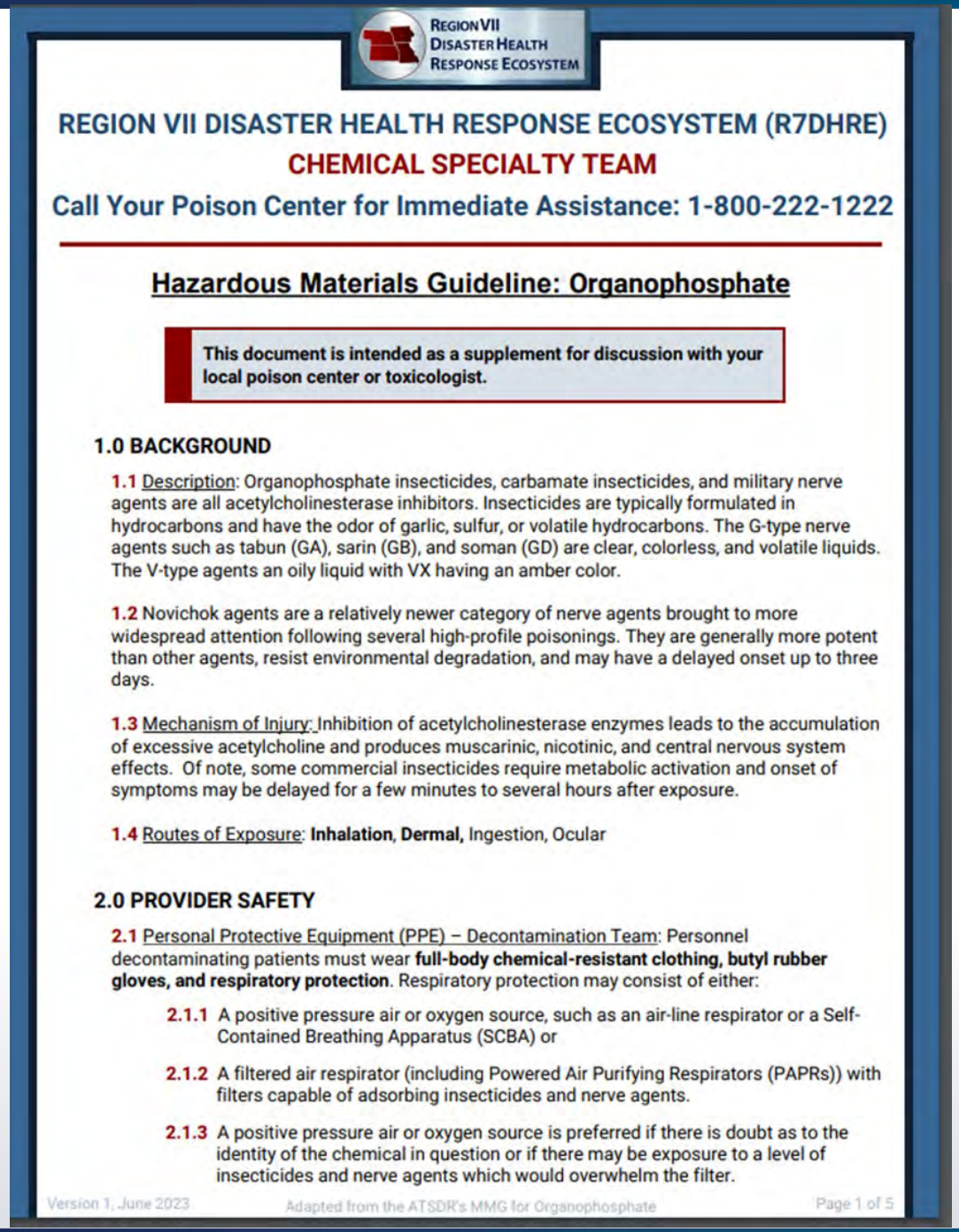

REGION VII DISASTER HEALTH RESPONSE ECOSYSTEM

REGION VII DISASTER HEALTH RESPONSE ECOSYSTEM (R7DHRE)

CHEMICAL SPECIALTY TEAM

Call Your Poison Center for Immediate Assistance: 1-800-222-1222

Hazardous Materials Guideline: Organophosphate

This document is intended as a supplement for discussion with your local poison center or toxicologist.

1.0 BACKGROUND

1.1 Description: Organophosphate insecticides, carbamate insecticides, and military nerve agents are all acetylcholinesterase inhibitors. Insecticides are typically formulated in hydrocarbons and have the odor of garlic, sulfur, or volatile hydrocarbons. The G-type nerve agents such as tabun (GA), sarin (GB), and soman (GD) are clear, colorless, and volatile liquids. The V-type agents an oily liquid with VX having an amber color.

1.2 Novichok agents are a relatively newer category of nerve agents brought to more widespread attention following several high-profile poisonings. They are generally more potent than other agents, resist environmental degradation, and may have a delayed onset up to three days.

1.3 Mechanism of Injury: Inhibition of acetylcholinesterase enzymes leads to the accumulation of excessive acetylcholine and produces muscarinic, nicotinic, and central nervous system effects. Of note, some commercial insecticides require metabolic activation and onset of symptoms may be delayed for a few minutes to several hours after exposure.

1.4 Routes of Exposure: **Inhalation**, **Dermal,** Ingestion, Ocular

2.0 PROVIDER SAFETY

2.1 Personal Protective Equipment (PPE) – Decontamination Team: Personnel decontaminating patients must wear **full-body chemical-resistant clothing, butyl rubber gloves, and respiratory protection**. Respiratory protection may consist of either:

2.1.1 A positive pressure air or oxygen source, such as an air-line respirator or a Self-Contained Breathing Apparatus (SCBA) or

2.1.2 A filtered air respirator (including Powered Air Purifying Respirators (PAPRs)) with filters capable of adsorbing insecticides and nerve agents.

2.1.3 A positive pressure air or oxygen source is preferred if there is doubt as to the identity of the chemical in question or if there may be exposure to a level of insecticides and nerve agents which would overwhelm the filter.

Version 1, June 2023 Adapted from the ATSDR's MMG for Organophosphate Page 1 of 5

Hazmat Guidelines

Ammonia	Aniline
Arsine	Chlorine
Corrosives Acids	Corrosive Bases
Cyanide	Hydrazine
Hydrofluoric Acid	Hydrogen Sulfide
Methyl Bromide	Methyl Isocyanate
Nitrogen Oxides	Organophosphates/Nerve agents
Phosgene	Phosphine
Riot Control Agents	Strychnine
Sulfur Dioxide	Unidentified Chemical

Hazmat Guidelines

REGION VII DISASTER HEALTH RESPONSE ECOSYSTEM

2.2 Personal Protective Equipment (PPE) – Treatment Team: Personnel treating patients who have been adequately decontaminated need no additional PPE other than **universal precautions** since there is no serious risk of secondary contamination. The **vomit from persons who have ingested insecticides or nerve agents is hazardous because it can off-gas toxic vapors**. Prepare treatment areas for rapid clean up in case the patient vomits.

2.3 Patient Decontamination:

2.3.1 **Decontaminate ALL PATIENTS**. The patients' hair and clothes can trap off-gas vapors. Those patients contaminated with insecticide or nerve agent solutions pose a risk of secondary contamination from off-gassing of vapors and direct contact with the chemical.

2.3.2 **Remove ALL clothing and jewelry.** Double bag clothing and jewelry to prevent off-gassing.

2.3.3 **Rapid decontamination is critical** because insecticides and nerve agents are rapidly absorbed from the skin. **Decontamination is best accomplished by irrigation with copious amounts of water**. Wash skin and hair with plain water for a minimum of 5 minutes and then wash twice with soap & water after washing with plain water. Washing with water alone (for a longer time) is acceptable if soap is not available. Absorbent powders such as flour, talcum powder, or Fuller's earth, can be used to absorb liquid insecticides and nerve agents if water is not available.

2.3.4 Remove contact lenses if it can be done without additional trauma to the eye. **Irrigate eyes for a minimum of 15 minutes.** Continue irrigation until eye pH is neutral (7 to 8).

2.3.5 Watch for hypothermia (1) in children and the elderly, (2) when decontamination is done with un-heated water, or (3) during cold weather.

2.3.6 **Reactive Skin Decontamination Lotion**, in the form of a lotion impregnated sponge, may be available to facilitate the rapid removal and/or neutralization of chemical warfare agents. If used, traditional decontamination with water or soap and water should follow when feasible.

3.0 SIGNS & SYMPTOMS

3.1 Severity of symptoms will depend upon the dose patients are exposed to and the route of exposure. Severe toxicity presents with **diffuse secretions, bradycardia, constricted pupils, altered mental status, seizures, and death**. Symptoms are further delineated in the table below. Delayed toxicities in the form of resurgent muscle weakness (Intermediate Syndrome) and a peripheral polyneuropathy are possible.

3.2 Insecticide and nerve agent vapors and liquids are readily absorbed through the lungs and eyes, producing local and systemic effects within seconds to minutes. The liquid is readily absorbed through the skin though effects may be delayed from minutes to up to 18 hours.

3.3 Ocular effects may result from either direct contact of the insecticide or nerve agent with the eye or from systemic absorption of the insecticide or nerve agent. Abdominal pain, nausea and vomiting are common manifestations of exposure by any route and may be the first systemic effects from dermal absorption. If these symptoms occur within an hour of dermal exposure, severe intoxication is likely.

3.4 **Exposure Grading:**

3.4.1 **Mild:** Miosis, rhinorrhea, mild chest tightness, mild shortness of breath, sweating, lacrimation

3.4.2 **Moderate:** Vomiting, diarrhea, severe chest tightness, wheezing, profuse airway secretions, respiratory distress, muscle weakness, bradycardia

3.4.3 **Severe:** Unconsciousness, seizures, paralysis, cyanosis, respiratory failure, apnea

Effects	Muscarinic Effects	Nicotinic Effects	CNS Effects
Memory Aid	DUMBELS	MTWHFS (days of the week)	CLAS
Symptoms	Diaphoresis Defecation Urination Miosis Bradycardia Bronchorrhea Bronchoconstriction Blurry & dim vision Emesis Eye pain Lacrimation Salivation Rhinorrhea	Mydriasis Tachycardia Weakness Leading to paralysis Hypertension Fasciculations Flaccid paralysis Seizures	Confusion Coma Lethargy Agitation Apnea Seizures

4.0 DIAGNOSTICS

4.1 Organophosphate and carbamate poisoning are a clinical diagnosis. Diagnostic testing may be indicated based on clinical judgement and the patient's presentation and level of illness.

4.2 Blood collected in two lavender EDTA tubes can be sent for red blood cell cholinesterase and plasma cholinesterase activity measurement to confirm the diagnosis and monitor recovery.

5.0 TREATMENT

5.1 General: **Treatment emphasizes aggressive supportive care and prompt administration of antidotal therapy if indicated.** Patients may need airway management, respiratory support, cardiovascular support with IV fluids and vasopressors, treatment for severe acidemia, and treatment of seizures with benzodiazepines or other GABA agonists.

5.2 Avoid: Other anticholinesterase agents, succinylcholine, and drugs that may decrease respiratory drive.

5.3 Ocular: **Irrigate eyes**. Perform a thorough eye exam: test visual acuity, and perform fluorescein and slit lamp examinations. Ophthalmology consultation may be necessary. Immediately consult an ophthalmologist for patients who have corneal injuries.

5.4 Ingestion: **Do NOT induce emesis or give activated charcoal**.

5.5 **ANTIDOTE: Atropine.** Atropine is an antimuscarinic medication which reverses the DUMBELS symptoms of cholinergic toxicity. Atropine **should be titrated to resolution of bradycardia, bronchorrhea, and bronchospasm**.

5.5.1 Adults: Begin with 2-5 mg, IV push, every 5-10 minutes as needed while titrating dose as needed

5.5.2 Children: Begin with 0.05 to 0.1 mg / kg, IV push, every 5-10 minutes as needed while titrating dose as needed

5.5.3 In massive exposures, over 1 gram of atropine has been given in the first 24 hours.

5.6 **ANTIDOTE: Benzodiazepines.** Benzodiazepines such as diazepam or midazolam should be given in sufficient quantities to control any seizures, agitation, or restlessness that results from cholinesterase inhibitor exposures. Benzodiazepines should be given intravenously or intramuscularly. Doses up to 30-40 mg of diazepam have been required.

5.7 **ANTIDOTE: Pralidoxime.** Pralidoxime prevents the bond between organophosphates and the acetylcholinesterase enzyme from becoming permanent.

5.7.1 Adults: Bolus 1-2 grams, IV, over 15-30 minutes, then a continuous IV infusion of 250-500 mg / hour.

5.7.2 Children: Bolus 25-50 mg / kg, IV, over 15-30 minutes, then a continuous IV infusion of 10-20 mg / kg / hr.

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OMHCC Pharmacy Workgroup

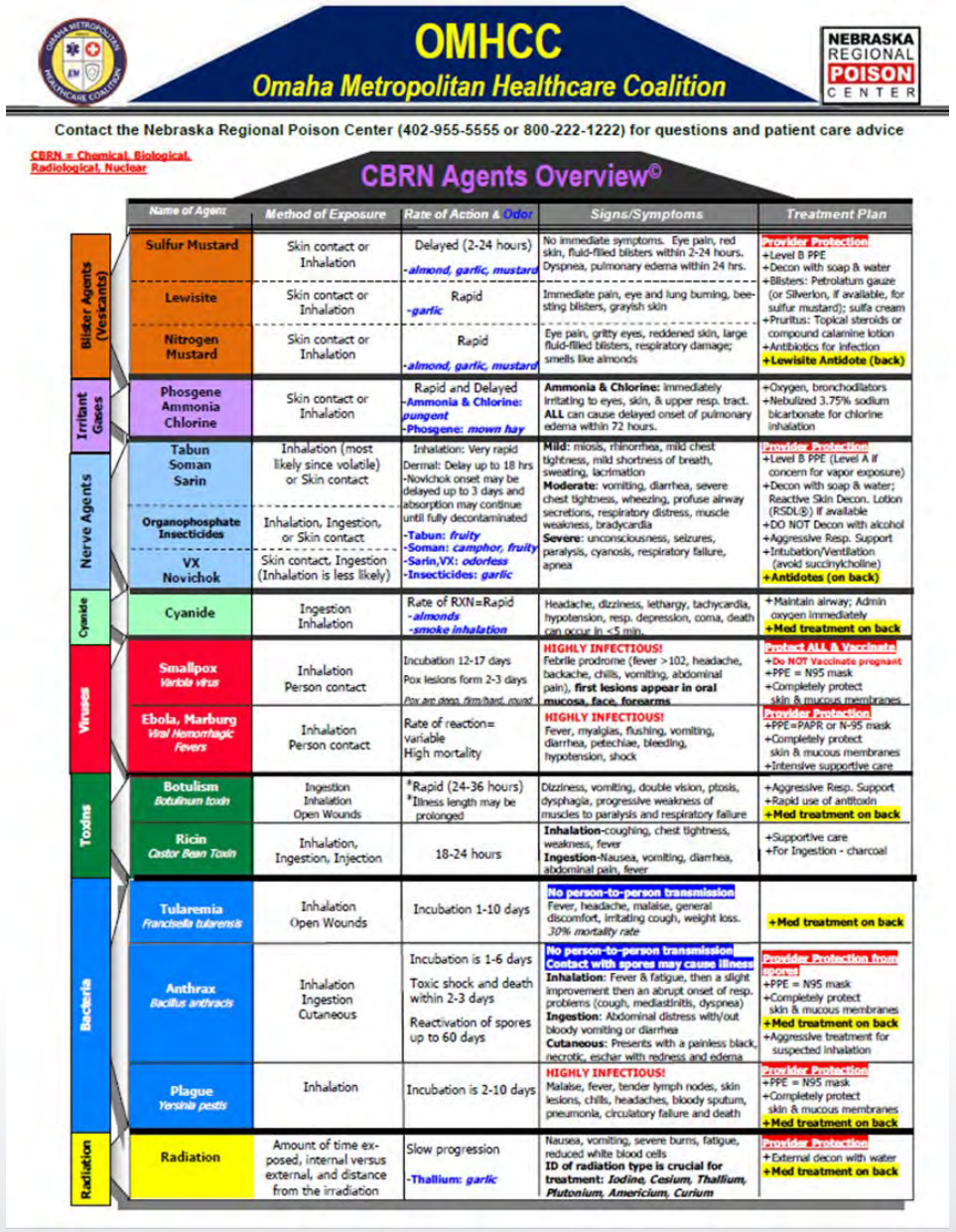
- Team of pharmacists, paramedics, public health, poison center
- Assesses pharmaceutical availability and needs during disasters
- Purchases/maintains medication caches (placed in rescue squads and hospitals)
- OMHCC's stockpiled meds are shared throughout the region
- Knows location of other regional & statewide caches (e.g., VA Medical Center, Offutt Air Force Base, CHEMPACKs)
- Assists providers & PH with obtaining meds during disasters & other PH events
  - **24/7 contact for requests: Nebraska Poison Center**
    - **800-222-1222 (if calling from NE) or 402-955-5555**

#NHCPC24

CBRN Agents Overview

Developed, reviewed, updated by the OMHCC Pharmacy Workgroup and Nebraska Poison Center

R7DHRE Chemical Team Site: https://static1.squarespace.com/static/625f47c7c516853b6bf783fe/t/62eaf20ca1cb507a934603e9/1659564557747/CBRN-Version14-revised-4.13.22.pdf



OMHCC
Omaha Metropolitan Healthcare Coalition

NEBRASKA REGIONAL POISON CENTER

Contact the Nebraska Regional Poison Center (402-955-5555 or 800-222-1222) for questions and patient care advice

CBRN = Chemical, Biological, Radiological, Nuclear

CBRN Agents Overview©

	Name of Agent	Method of Exposure	Rate of Action & Odor	Signs/Symptoms	Treatment Plan
Blister Agents (Vesicants)	Sulfur Mustard	Skin contact or Inhalation	Delayed (2-24 hours) -almond, garlic, mustard	No immediate symptoms. Eye pain, red skin, fluid-filled blisters within 2-24 hours. Dyspnea, pulmonary edema within 24 hrs.	Provider Protection +Level B PPE +Decon with soap & water +Blisters: Petrolatum gauze (or Silverlon, if available, for sulfur mustard); sulfa cream +Pruritus: Topical steroids or compound calamine lotion +Antibiotics for infection +Lewisite Antidote (back)
	Lewisite	Skin contact or Inhalation	Rapid -garlic	Immediate pain, eye and lung burning, bee-sting blisters, grayish skin	
	Nitrogen Mustard	Skin contact or Inhalation	Rapid -almond, garlic, mustard	Eye pain, gritty eyes, reddened skin, large fluid-filled blisters, respiratory damage; smells like almonds	
Irritant Gases	Phosgene Ammonia Chlorine	Skin contact or Inhalation	Rapid and Delayed -Ammonia & Chlorine: pungent -Phosgene: mown hay	**Ammonia & Chlorine:** Immediately irritating to eyes, skin, & upper resp. tract. **ALL** can cause delayed onset of pulmonary edema within 72 hours.	+Oxygen, bronchodilators +Nebulized 3.75% sodium bicarbonate for chlorine inhalation
Nerve Agents	Tabun Soman Sarin	Inhalation (most likely since volatile) or Skin contact	Inhalation: Very rapid Dermal: Delay up to 18 hrs -Novichok onset may be delayed up to 3 days and absorption may continue until fully decontaminated -Tabun: fruity -Soman: camphor, fruity -Sarin,VX: odorless -Insecticides: garlic	**Mild:** miosis, rhinorrhea, mild chest tightness, mild shortness of breath, sweating, lacrimation **Moderate:** vomiting, diarrhea, severe chest tightness, wheezing, profuse airway secretions, respiratory distress, muscle weakness, bradycardia **Severe:** unconsciousness, seizures, paralysis, cyanosis, respiratory failure, apnea	Provider Protection +Level B PPE (Level A if concern for vapor exposure) +Decon with soap & water; Reactive Skin Decon. Lotion (RSDL®) if available +DO NOT Decon with alcohol +Aggressive Resp. Support +Intubation/Ventilation (avoid succinylcholine) +Antidotes (on back)
	Organophosphate Insecticides	Inhalation, Ingestion, or Skin contact			
	VX Novichok	Skin contact, Ingestion (Inhalation is less likely)			
Cyanide	Cyanide	Ingestion Inhalation	Rate of RXN=Rapid -almonds -smoke inhalation	Headache, dizziness, lethargy, tachycardia, hypotension, resp. depression, coma, death can occur in <5 min	+Maintain airway; Admin oxygen immediately +Med treatment on back
Viruses	Smallpox *Variola virus*	Inhalation Person contact	Incubation 12-17 days Pox lesions form 2-3 days *Pox are deep, firm/hard, round*	HIGHLY INFECTIOUS! Febrile prodrome (fever >102, headache, backache, chills, vomiting, abdominal pain), **first lesions appear in oral mucosa, face, forearms**	Protect ALL & Vaccinate +Do NOT Vaccinate pregnant +PPE = N95 mask +Completely protect skin & mucous membranes
	Ebola, Marburg *Viral Hemorrhagic Fevers*	Inhalation Person contact	Rate of reaction= variable High mortality	HIGHLY INFECTIOUS! Fever, myalgias, flushing, vomiting, diarrhea, petechiae, bleeding, hypotension, shock	Provider Protection +PPE=PAPR or N-95 mask +Completely protect skin & mucous membranes +Intensive supportive care
Toxins	Botulism *Botulinum toxin*	Ingestion Inhalation Open Wounds	*Rapid (24-36 hours) *Illness length may be prolonged	Dizziness, vomiting, double vision, ptosis, dysphagia, progressive weakness of muscles to paralysis and respiratory failure	+Aggressive Resp. Support +Rapid use of antitoxin +Med treatment on back
	Ricin *Castor Bean Toxin*	Inhalation, Ingestion, Injection	18-24 hours	**Inhalation**-coughing, chest tightness, weakness, fever **Ingestion**-Nausea, vomiting, diarrhea, abdominal pain, fever	+Supportive care +For Ingestion - charcoal
Bacteria	Tularemia *Francisella tularensis*	Inhalation Open Wounds	Incubation 1-10 days	No person-to-person transmission Fever, headache, malaise, general discomfort, irritating cough, weight loss. *30% mortality rate*	+Med treatment on back
	Anthrax *Bacillus anthracis*	Inhalation Ingestion Cutaneous	Incubation is 1-6 days Toxic shock and death within 2-3 days Reactivation of spores up to 60 days	No person-to-person transmission Contact with spores may cause illness **Inhalation**: Fever & fatigue, then a slight improvement then an abrupt onset of resp. problems (cough, mediastinitis, dyspnea) **Ingestion**: Abdominal distress with/out bloody vomiting or diarrhea **Cutaneous**: Presents with a painless black, necrotic, escher with redness and edema	Provider Protection from Spores +PPE = N95 mask +Completely protect skin & mucous membranes +Med treatment on back +Aggressive treatment for suspected inhalation
	Plague *Yersinia pestis*	Inhalation	Incubation is 2-10 days	HIGHLY INFECTIOUS! Malaise, fever, tender lymph nodes, skin lesions, chills, headaches, bloody sputum, pneumonia, circulatory failure and death	Provider Protection +PPE = N95 mask +Completely protect skin & mucous membranes +Med treatment on back
Radiation	Radiation	Amount of time exposed, internal versus external, and distance from the irradiation	Slow progression -Thallium: garlic	Nausea, vomiting, severe burns, fatigue, reduced white blood cells **ID of radiation type is crucial for treatment: *Iodine, Cesium, Thallium, Plutonium, Americium, Curium***	Provider Protection +External decon with water +Med treatment on back

REGION VII DISASTER HEALTH RESPONSE ECOSYSTEM

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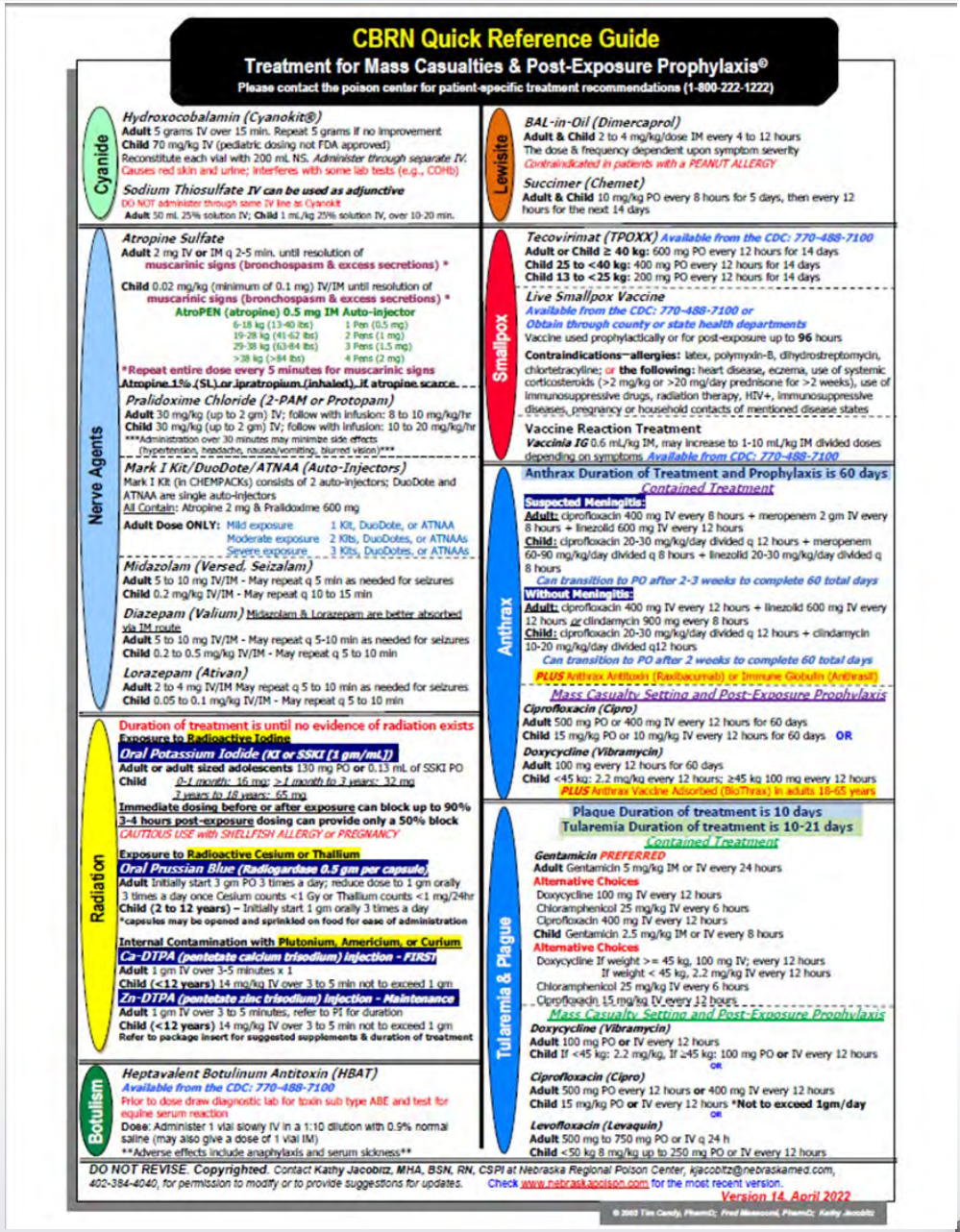
CBRN Agents Overview

Pharmaceutical treatment and dosing information

Call your Poison Center for patient-specific treatment recommendations



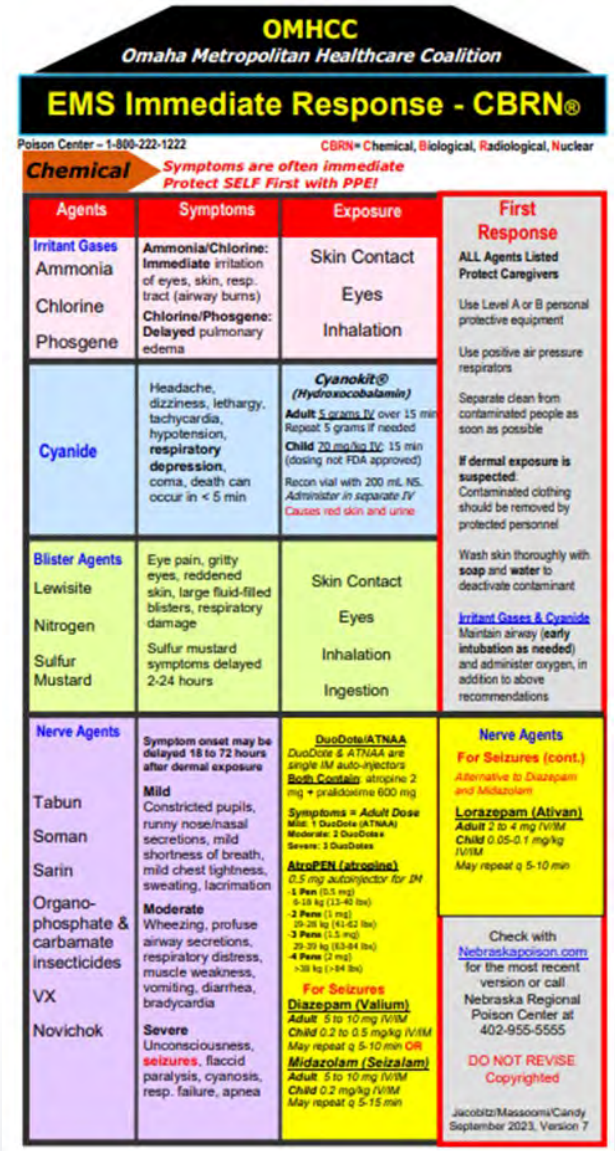
POISON HELP 1-800-222-1222

Region VII Disaster Health Response Ecosystem

#NHCPC24

OMHCC Pharmacy Workgroup

- Developed, reviewed, updated by the OMHCC Pharmacy Workgroup and Nebraska Poison Center
- Can be printed as 2-sided card for EMS
- https://static1.squarespace.com/static/625f47c7c516853b6bf783fe/t/65131b1831bf074c1a9b45aa/1695750937206/OMMRS+EMS+Card+-+Both+Sides+-revised+9.23.pdf



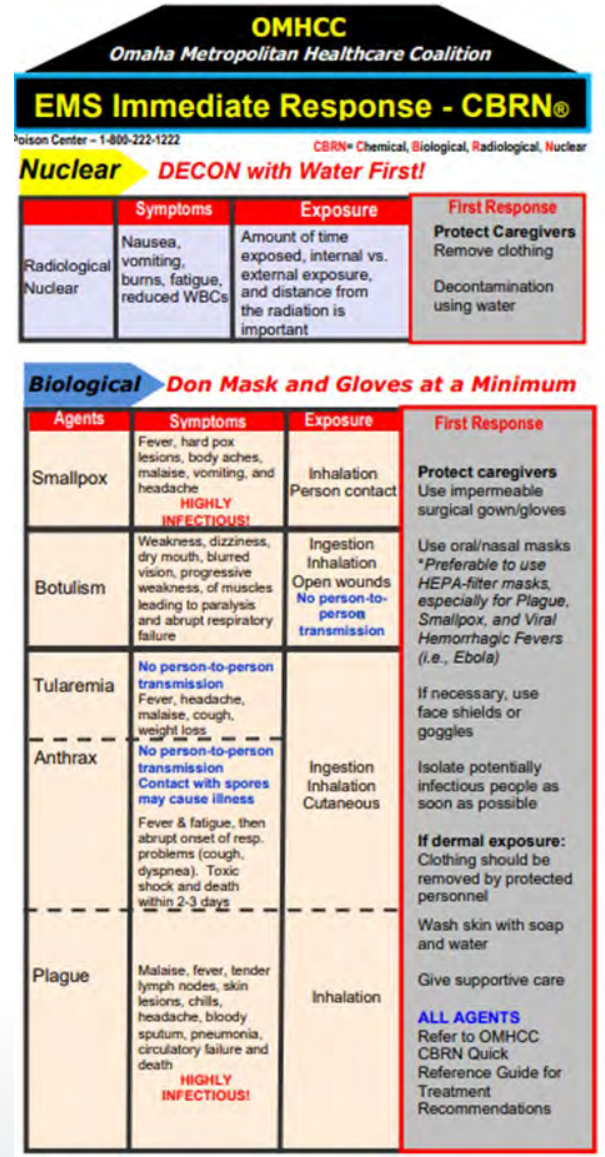
OMHCC
Omaha Metropolitan Healthcare Coalition

EMS Immediate Response - CBRN®

Poison Center – 1-800-222-1222 — CBRN= Chemical, Biological, Radiological, Nuclear

Chemical — *Symptoms are often immediate. Protect SELF First with PPE!*

Agents	Symptoms	Exposure	First Response
Irritant Gases: Ammonia, Chlorine, Phosgene	**Ammonia/Chlorine: Immediate** irritation of eyes, skin, resp. tract (airway burns). **Chlorine/Phosgene: Delayed** pulmonary edema	Skin Contact, Eyes, Inhalation	**ALL Agents Listed. Protect Caregivers.** Use Level A or B personal protective equipment. Use positive air pressure respirators. Separate clean from contaminated people as soon as possible. **If dermal exposure is suspected:** Contaminated clothing should be removed by protected personnel. Wash skin thoroughly with **soap** and **water** to deactivate contaminant. Irritant Gases & Cyanide: Maintain airway (**early intubation as needed**) and administer oxygen, in addition to above recommendations
Cyanide	Headache, dizziness, lethargy, tachycardia, hypotension, **respiratory depression**, coma, death can occur in < 5 min	***Cyanokit® (Hydroxocobalamin)*** **Adult** 5 grams IV over 15 min. Repeat 5 grams if needed. **Child** 70 mg/kg IV; 15 min (dosing not FDA approved). Recon vial with 200 mL NS. *Administer in separate IV.* Causes red skin and urine	
Blister Agents: Lewisite, Nitrogen, Sulfur Mustard	Eye pain, gritty eyes, reddened skin, large fluid-filled blisters, respiratory damage. Sulfur mustard symptoms delayed 2-24 hours	Skin Contact, Eyes, Inhalation, Ingestion	
Nerve Agents: Tabun, Soman, Sarin, Organo-phosphate & carbamate insecticides, VX, Novichok	**Symptom onset may be delayed 18 to 72 hours after dermal exposure.** **Mild:** Constricted pupils, runny nose/nasal secretions, mild shortness of breath, mild chest tightness, sweating, lacrimation. **Moderate:** Wheezing, profuse airway secretions, respiratory distress, muscle weakness, vomiting, diarrhea, bradycardia. **Severe:** Unconsciousness, **seizures**, flaccid paralysis, cyanosis, resp. failure, apnea	**DuoDote/ATNAA** — *DuoDote & ATNAA are single IM auto-injectors.* **Both Contain:** atropine 2 mg + pralidoxime 600 mg. ***Symptoms = Adult Dose*** Mild: 1 DuoDote (ATNAA) Moderate: 2 DuoDotes Severe: 3 DuoDotes. **AtroPEN (atropine)** *0.5 mg autoinjector for IM* 1 Pen (0.5 mg) 6-18 kg (13-40 lbs); 2 Pens (1 mg) 20-28 kg (41-62 lbs); 3 Pens (1.5 mg) 29-39 kg (63-84 lbs); 4 Pens (2 mg) >38 kg (>84 lbs). **For Seizures: Diazepam (Valium)** *Adult 5 to 10 mg IV/IM; Child 0.2 to 0.5 mg/kg IV/IM; May repeat q 5-10 min* **OR** ***Midazolam (Seizalam)*** *Adult 5 to 10 mg IV/IM; Child 0.2 mg/kg IV/IM; May repeat q 5-15 min*	**Nerve Agents — For Seizures (cont.)** *Alternative to Diazepam and Midazolam.* **Lorazepam (Ativan)** *Adult 2 to 4 mg IV/IM; Child 0.05-0.1 mg/kg IV/IM; May repeat q 5-10 min.* Check with Nebraskapoison.com for the most recent version or call Nebraska Regional Poison Center at 402-955-5555. DO NOT REVISE. Copyrighted. Jacobitz/Massoomi/Candy September 2023, Version 7



OMHCC
Omaha Metropolitan Healthcare Coalition

EMS Immediate Response - CBRN®

Poison Center – 1-800-222-1222 — CBRN= Chemical, Biological, Radiological, Nuclear

Nuclear — *DECON with Water First!*

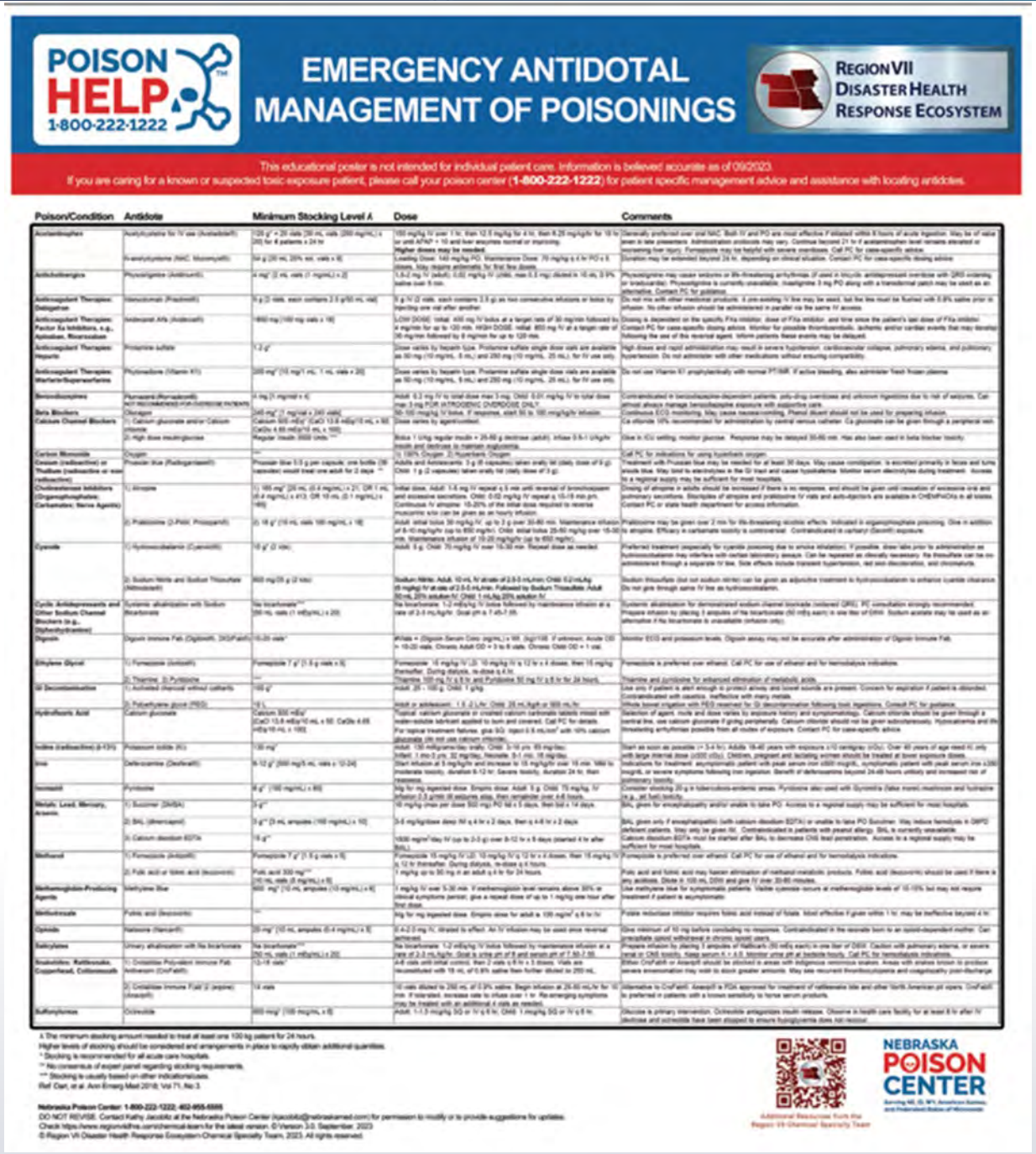
	Symptoms	Exposure	First Response
Radiological Nuclear	Nausea, vomiting, burns, fatigue, reduced WBCs	Amount of time exposed, internal vs. external exposure, and distance from the radiation is important	**Protect Caregivers** Remove clothing. Decontamination using water

Biological — *Don Mask and Gloves at a Minimum*

Agents	Symptoms	Exposure	First Response
Smallpox	Fever, hard pox lesions, body aches, malaise, vomiting, and headache. **HIGHLY INFECTIOUS!**	Inhalation. Person contact	**Protect caregivers** Use impermeable surgical gown/gloves. Use oral/nasal masks **Preferable to use HEPA-filter masks, especially for Plague, Smallpox, and Viral Hemorrhagic Fevers (i.e., Ebola)*
Botulism	Weakness, dizziness, dry mouth, blurred vision, progressive weakness, of muscles leading to paralysis and abrupt respiratory failure	Ingestion. Inhalation. Open wounds. **No person-to-person transmission**	If necessary, use face shields or goggles. Isolate potentially infectious people as soon as possible. **If dermal exposure:** Clothing should be removed by protected personnel. Wash skin with soap and water. Give supportive care. **ALL AGENTS** Refer to OMHCC CBRN Quick Reference Guide for Treatment Recommendations
Tularemia	**No person-to-person transmission** Fever, headache, malaise, cough, weight loss	Ingestion. Inhalation. Cutaneous	
Anthrax	**No person-to-person transmission. Contact with spores may cause illness.** Fever & fatigue, then abrupt onset of resp. problems (cough, dyspnea). Toxic shock and death within 2-3 days		
Plague	Malaise, fever, tender lymph nodes, skin lesions, chills, headache, bloody sputum, pneumonia, circulatory failure and death. **HIGHLY INFECTIOUS!**	Inhalation	

NEBRASKA POISON CENTER
Serving NE, ID, WY, American Samoa, and Federated States of Micronesia

#NHCPC24



POISON HELP 1-800-222-1222

EMERGENCY ANTIDOTAL MANAGEMENT OF POISONINGS

REGION VII DISASTER HEALTH RESPONSE ECOSYSTEM

This educational poster is not intended for individual patient care. Information is believed accurate as of 09/2023.
If you are caring for a known or suspected toxic exposure patient, please call your poison center (**1-800-222-1222**) for patient specific management advice and assistance with locating antidotes.

Poison/Condition	Antidote	Minimum Stocking Level A	Dose	Comments
Acetaminophen	Acetylcysteine for IV use (Acetadote®)	10g g* + 20 vials [30 mL vials (200 mg/mL) x 10] for 4 patients x 24 hr	150 mg/kg IV over 1 hr, then 12.5 mg/kg for 4 hr, then 6.25 mg/kg/hr for 19 hr or until APAP < 10 and liver enzymes normal or improving. **Higher doses may be needed.**	Generally preferred over oral NAC. Both IV and PO are most effective if initiated within 8 hours of acute ingestion. May be of value even in late presenters. Administration protocols may vary. Continue beyond 21 hr if acetaminophen level remains elevated or worsening liver injury. Fomepizole may be helpful with severe overdoses. Call PC for case-specific advice.
	Acetylcysteine (NAC, Mucomyst®)	50 g [20 mL 25% sol. vials x 8]	Loading Dose: 140 mg/kg PO. Maintenance Dose: 70 mg/kg q 4 hr PO x 3 doses, 4day stopping antimetic for first few doses.	Duration may be extended beyond 24 hr, depending on clinical situation. Contact PC for case-specific dosing advice.
Anticholinergics	Physostigmine (Antilirium®)	4 mg* [2 mL vials (1 mg/mL) x 2]	1.5-2 mg IV (adult); 0.02 mg/kg IV (child, max 0.5 mg); diluted in 10 mL 0.9% saline over 5 min.	Physostigmine may cause seizures or life-threatening arrhythmias. If used in tricyclic antidepressant overdose with QRS widening or bradycardia: Physostigmine is currently unavailable; rivastigmine 3 mg PO along with a transdermal patch may be used as an alternative. Contact PC for guidance.
Anticoagulant Therapies: Dabigatran	Idarucizumab (Praxbind®)	5 g [2 vials, each contains 2.5 g/50 mL vial]	5 g IV (2 vials, each contains 2.5 g) as two consecutive infusions or bolus by injecting one vial after another	Do not mix with other medicinal products. If pre-existing IV line may be used, but line first must be flushed with 0.9% saline prior to infusion. No other infusion should be administered in parallel via the same IV access.
Anticoagulant Therapies: Factor Xa Inhibitors, e.g., Apixaban, Rivaroxaban	Andexanet Alfa (Andexxa®)	~800 mg (100 mg vials x 16)	LOW DOSE: Initial: 400 mg IV bolus at a target rate of 30 mg/min followed by a mg/min for up to ~120 min. HIGH DOSE: Initial: 800 mg IV at a target rate of 30 mg/min followed by a mg/min for up to ~120 min.	Dosing is dependent on the specific Fxa inhibitor, dose of Fxa inhibitor, and time since the patient's last dose of Fxa inhibitor. Contact PC for case-specific dosing advice. Monitor for possible thromboembolic, ischemic and/or cardiac events that may develop following the use of this reversal agent. Inform patients these events may be delayed.
Anticoagulant Therapies: Heparin	Protamine sulfate	1-2 g*	Dose varies by heparin type. Protamine sulfate single dose vials are available as 50 mg (10 mg/mL, 5 mL) and 250 mg (10 mg/mL, 25 mL), for IV use only.	High doses and rapid administration may result in severe hypotension, cardiovascular collapse, pulmonary edema, and pulmonary hypertension. Do not administer with other medications without ensuring compatibility.
Anticoagulant Therapies: Warfarin/Superwarfarins	Phytonadione (Vitamin K1)	200 mg* [10 mg/1 mL, 1 mL vials x 20]	Dose varies by heparin type. Protamine sulfate single dose vials are available as 50 mg (10 mg/mL, 5 mL) and 250 mg (10 mg/mL, 25 mL), for IV use only.	Do not use Vitamin K1 prophylactically with normal PT/INR. If active bleeding, also administer fresh frozen plasma
Benzodiazepines	Flumazenil (Romazicon®) NOT RECOMMENDED FOR OVERDOSE PATIENTS	5 mg [1 mg/vial x 4]	Adult: 0.2 mg IV to total dose max 3 mg. Child: 0.01 mg/kg IV to total dose max 3 mg FOR IATROGENIC OVERDOSE ONLY	Contraindicated in benzodiazepine-dependent patients, poly-drug overdoses and unknown ingestions due to risk of seizures. Can almost always manage benzodiazepine exposure with supportive care.
Beta Blockers	Glucagon	240 mg* [1 mg/vial x 240 vials]	50-100 mg/kg IV bolus. If response, start 50 to 100 mg/kg/hr infusion.	Continuous ECG monitoring; may cause nausea/vomiting. Phenol diluent should not be used for preparing infusion.
Calcium Channel Blockers	1) Calcium gluconate and/or Calcium chloride	Calcium 600 mEq* (CaCl 13.6 mEq/10 mL x 60; CaGlu 4.65 mEq/10 mL x 160)	Dose varies by agent/context.	Ca chloride 10% recommended for administration by central venous catheter. Ca gluconate can be given through a peripheral vein.
	2) High dose insulin/glucose	Regular Insulin 3000 Units ***	Bolus 1 U/kg regular insulin + 25-50 g dextrose (adult); infuse 0.5-1 U/kg/hr insulin and dextrose to maintain euglycemia	Dose in ICU setting; monitor glucose. Response may be delayed 30-60 min. Has also been used in beta blocker toxicity.
Carbon Monoxide	Oxygen	---	1) 100% Oxygen 2) Hyperbaric Oxygen	Call PC for indications for using hyperbaric oxygen.
Cesium (radioactive) or Thallium (radioactive or non-radioactive)	Prussian blue (Radiogardase®)	Prussian blue 3.0 g per capsule; one bottle (30 capsules) would treat one adult for 2 days **	Adults and Adolescents: 3 g (6 capsules) taken orally tid (daily dose of 9 g). Child: 1 g (2 capsules) taken orally tid (daily dose of 3 g).	Treatment with Prussian blue may be needed for at least 30 days. May cause constipation. Is excreted primarily in feces and turns stools blue. May bind to electrolytes in the GI tract and cause hypokalemia. Monitor serum electrolytes during treatment. Access to a regional supply may be sufficient for most hospitals.
Cholinesterase Inhibitors (Organophosphates; Carbamates; Nerve Agents)	1) Atropine	1) 100 mg* [20 mL (5.4 mg/mL) x 2; OR 1 mL (5.4 mg/mL) x 413; OR 10 mL (0.1 mg/mL) x 100]	Initial dose, Adult: 1-5 mg IV repeat q 5 min until reversal of bronchospasm and excessive secretions. Child: 0.02 mg/kg IV repeat q 15-10 min prn. Continuous IV atropine: 10-20% of the initial dose required to reverse muscarinic s/sx can be given as an hourly infusion.	Dosing of atropine in adults should be increased if there is no response, and should be given until cessation of excessive oral and pulmonary secretions. Stockpiles of atropine and pralidoxime IV vials and auto-injectors are available in CHEMPACKs in all states. Contact PC or state health department for access information.
	2) Pralidoxime (2-PAM; Protopam®)	2) 18 g* [10 mL vials 100 mg/mL x 18]	Adult: initial bolus 30 mg/kg IV, up to 2 g over 30-60 min. Maintenance infusion of 8-10 mg/kg/hr (up to 850 mg/hr). Child: initial bolus 25-50 mg/kg over 15-30 min. Maintenance infusion of 10-20 mg/kg/hr (up to 650 mg/hr).	Pralidoxime may be given over 2 min for life-threatening alcoholic effects. Indicated in organophosphate poisoning. Dose in addition to atropine. Efficacy in carbamate toxicity is controversial. Contraindicated in carbaryl (Sevin®) exposure.
Cyanide	1) Hydroxocobalamin (Cyanokit®)	10 g* (2 vials)	Adult: 5 g. Child: 70 mg/kg IV over 15-30 min. Repeat dose as needed.	Preferred treatment (especially for cyanide poisoning due to smoke inhalation). If possible, draw labs prior to administration as hydroxocobalamin may interfere with certain laboratory assays. Can be repeated as clinically necessary. Rx threshold can be reduced if administered through a separate IV line. Side effects include transient hypertension, red skin discoloration, and chromaturia.
	2) Sodium Nitrite and Sodium Thiosulfate (Nithiodote®)	800 mg [25 g (2 vials)]	Sodium Nitrite: Adult: 10 mL IV at rate of 2.5-5 mL/min; Child: 0.2 mL/kg (6 mg/kg) IV at rate of 2.5-5 mL/min. Followed by Sodium Thiosulfate: Adult: 50 mL 20% solution IV; Child: 1 mL/kg 20% solution IV.	Sodium thiosulfate (but not sodium nitrite) can be given as adjunctive treatment to hydroxocobalamin to enhance cyanide clearance. Do not give through same IV line as hydroxocobalamin.
Cyclic Antidepressants and Other Sodium Channel Blockers (e.g., Diphenhydramine)	Systemic alkalinization with Sodium Bicarbonate	Na bicarbonate*** [50 mL vials (1 mEq/mL) x 20]	Na bicarbonate: 1-2 mEq/kg IV bolus followed by maintenance infusion at a rate of 2-3 mL/kg/hr. Goal pH ≥ 7.45-7.55.	Systemic alkalinization for demonstrated sodium channel blockade (widened QRS). PC consultation strongly recommended. Prepare infusion by placing 1 ampules of Na bicarbonate (50 mEq each) in one liter of D5W. Sodium acetate may be used as an alternative if Na bicarbonate is unavailable (infusion only).
Digoxin	Digoxin Immune Fab (Digibind®, DIGIFab®)	10-20 vials*	Whole = (Digoxin Serum Conc ng/mL) x kg /100. If unknown, Acute OD = 10-20 vials. Chronic Adult OD = 3 to 6 vials. Chronic Child OD = 1 vial.	Monitor ECG and potassium levels. Digoxin assay may not be accurate after administration of Digoxin Immune Fab.
Ethylene Glycol	1) Fomepizole (Antizol®)	Fomepizole 7 g* [1.5 g vials x 5]	Fomepizole: 15 mg/kg IV LD, 10 mg/kg IV q 12 hr x 4 doses, then 15 mg/kg thereafter. During dialysis, re-dose q 4 hr.	Fomepizole is preferred over ethanol. Call PC for use of ethanol and for hemodialysis indications.
	2) Thiamine 3) Pyridoxine	---	Thiamine 100 mg IV q 8 hr and Pyridoxine 50 mg IV q 8 hr for 24 hours.	Thiamine and pyridoxine for enhanced elimination of metabolic acids.
GI Decontamination	1) Activated charcoal without cathartic	~50 g*	Adult: 25 - 100 g. Child: 1 g/kg	Use only if patient is alert enough to protect airway and bowel sounds are present. Concern for aspiration if patient is disorded. Contraindicated with caustics. Ineffective with many metals.
	2) Polyethylene glycol (PEG)	~5 L	Adult or adolescent: 1 L (2 L/hr. Child: 25 mL/kg/hr or 500 mL/hr	Whole bowel irrigation with PEG reversed for GI decontamination following toxic ingestions. Consult PC for guidance.
Hydrofluoric Acid	Calcium gluconate	Calcium 500 mEq* (CaCl 13.6 mEq/10 mL x 50; CaGlu 4.65 mEq/10 mL x 100)	Topical: calcium gluconate or crushed calcium carbonate tablets mixed with water-soluble lubricant applied to burn and covered. Call PC for details. For topical treatment failures, give 0.5 - inject 0.5 mL/cm² with 10% calcium gluconate into mid-axis calcium infusion.	Selection of agent, route and dose varies by exposure history and symptomatology. Calcium chloride should be given through a central line, see calcium gluconate if going peripherally. Calcium chloride should not be given subcutaneously. Hypocalcemia and life-threatening arrhythmias possible from all routes of exposure. Contact PC for case-specific advice.
Iodine (radioactive) (I-131)	Potassium iodide (KI)	130 mg*	Adult: 130 mg/pump-day orally. Child: 3-10 yrs: 65 mg/day; Infant: 1 mo-3 yrs: 32 mg/day; Neonate: 3-1 mo: 16 mg/day	Start as soon as possible (< 3-4 hr). Adults: 18-40 years with exposure (>5 cancers/yr/Gy). Over 40 years of age need Rx only with large internal dose (≥500 cGy). Children, pregnant and lactating women should be treated at lower exposure doses.
Iron	Deferoxamine (Desferal®)	6-12 g* [500 mg/5 mL vials x 12-24]	Start infusion at 5 mg/kg/hr and increase to 15 mg/kg/hr over 15 min. Max for moderate toxicity, duration 8-12 hr. Severe toxicity, duration 24 hr, then reassess.	Indications for treatment: asymptomatic patient with peak serum iron ≥500 mcg/dL, symptomatic patient with peak serum iron ≥350 mcg/dL or severe symptoms following iron ingestion. Benefit of deferoxamine beyond 24-48 hours unlikely and increased risk of pulmonary toxicity.
Isoniazid	Pyridoxine	4 g* [100 mg/mL x 40]	1g for mg ingested dose. Empiric dose: Adult: 5 g. Child: 75 mg/kg. IV infusion 2-3 g/min (40 seizures stop, then ventilation over 4-6 hours.	Consider stocking 20 g in tuberculosis-endemic areas. Pyridoxine also used with Gyromitrin (false morel) mushroom and hydrazine (e.g., jet fuel) toxicity.
Metals: Lead, Mercury, Arsenic	1) Succimer (DMSA)	3 g*	10 mg/kg once per dose 500 mg PO TID x 5 days, then bid x 14 days.	BAL given only if encephalopathic and/or unable to take PO. Access to a regional supply may be sufficient for most hospitals.
	2) BAL (dimercaprol)	3 g* [3 mL ampules (100 mg/mL) x 10]	3-5 mg/kg/dose deep IM q 4 hr x 2 days, then q 6 hr x 2 days	BAL given only if encephalopathic (with calcium disodium EDTA) or unable to take PO Succimer. May induce hemolysis in G6PD deficient patients. May only give IM. Contraindicated in patients with peanut allergy. BAL is currently unavailable.
	3) Calcium disodium EDTA	1g g*	1500 mg/m² /day IV (up to 2-3 g) over 8-12 hr x 5 days (started 4 hr after BAL)	Calcium disodium EDTA must be started after BAL to decrease CNS lead penetration. Access to a regional supply may be sufficient for most hospitals.
Methanol	1) Fomepizole (Antizol®)	Fomepizole 7 g* [1.5 g vials x 5]	Fomepizole 15 mg/kg IV LD, 10 mg/kg IV q 12 hr x 4 doses, then 15 mg/kg q 12 hr thereafter. During dialysis, re-dose q 4 hours.	Fomepizole is preferred over ethanol. Call PC for use of ethanol and for hemodialysis indications.
	2) Folic acid or folinic acid (leucovorin)	Folic acid 300 mg** [10 mL vials (5 mg/mL) x 6]	1 mg/kg IV over 5-30 min. If methemoglobin level remains above 30% or clinical symptoms persist, give a repeat dose of up to 1 mg/kg one hour after first dose.	Folic acid and folinic acid may hasten elimination of methanol metabolic products. Folinic acid (leucovorin) should be used if there is any acidosis. Dilute in 100 mL D5W and give IV over 30-60 minutes.
Methemoglobin-Producing Agents	Methylene blue	650 mg* [10 mL ampules (10 mg/mL) x 6]	1 mg/kg IV over 5-30 min. If methemoglobin level remains above 30% or clinical symptoms persist, give a repeat dose of up to 1 mg/kg one hour after first dose.	Methylene blue for symptomatic patients. Visible cyanosis occurs at methemoglobin levels of 10-15% but may not require treatment if patient is asymptomatic.
Methotrexate	Folinic acid (leucovorin)	---	1mg for mg ingested dose. Empiric dose for adult is 100 mg/m² q 6 hr IV	Folate reductase inhibitor requires folinic acid instead of folate. Folinic effective if given within 1 hr; may be ineffective beyond 4 hr.
Opioids	Naloxone (Narcan®)	20 mg* [10 mL ampules (0.4 mg/mL) x 5]	0.4-2.0 mg IV, titrated to effect. An IV infusion may be used once reversal achieved.	Give minimum of 10 mg before concluding no response. Contraindicated in the neonate born to an opioid-dependent mother. Can precipitate opioid withdrawal in chronic opioid users.
Salicylates	Urinary alkalinization with Na bicarbonate	Na bicarbonate*** [50 mL vials (1 mEq/mL) x 20]	Na bicarbonate: 1-2 mEq/kg IV bolus followed by maintenance infusion at a rate of 2-3 mL/kg/hr. Goal is urine pH of 8 and serum pH of 7.50-7.55.	Prepare infusion by placing 1 ampules of Na bicarb (50 mEq each) in one liter of D5W. Caution with pulmonary edema, or severe renal or CNS toxicity. Keep serum K > 4.0. Monitor urine pH at bedside hourly. Call PC for hemodialysis indications.
Snakebites: Rattlesnake, Copperhead, Cottonmouth	1) Crotalidae Polyvalent Immune Fab (Antivenom (CroFab®))	12-18 vials*	4-6 vials until initial control, then 2 vials q 6 hr x 3 doses. Vials are reconstituted with 10 mL of 0.9% saline then further diluted to 250 mL.	Either CroFab® or Anavip® should be stocked in areas with indigenous venomous snakes. Areas with snakes known to produce severe envenomation may wish to stock greater amounts. May see recurrent thrombocytopenia and coagulopathy post-discharge.
	2) Crotalidae Immune F(ab') 2 (equine) (Anavip®)	12 vials	10 vials diluted to 250 mL of 0.9% saline. Begin infusion at 25-50 mL/hr for 10 min. If tolerated, increase rate to infuse over 1 hr. Re-emerging symptoms may be treated with an additional 4 vials as needed.	Alternative to CroFab®. Anavip® is FDA approved for treatment of rattlesnake bite and other North American pit vipers. CroFab® is preferred in patients with a known sensitivity to horse serum products.
Sulfonylureas	Octreotide	600 mcg* [100 mcg/mL x 6]	Adult: 1-1.5 mcg/kg SQ or IV q 6 hr; Child: 1 mcg/kg SQ or IV q 6 hr.	Glucose is primary intervention. Octreotide antagonizes insulin release. Observe in health care facility for at least 8 hr after IV dextrose and octreotide have been stopped to ensure hyperglycemia does not recur.

A The minimum stocking amount needed to treat at least one 100 kg patient for 24 hours.
Higher levels of stocking should be considered and arrangements in place to rapidly obtain additional quantities.
* Stocking is recommended for all acute care hospitals.
** No consensus of expert panel regarding stocking requirements.
*** Stocking is usually based on other indications/uses.
Ref: Dart, et al. Ann Emerg Med 2018; Vol 71, No 3.

Nebraska Poison Center: 1-800-222-1222; 402-955-5555
DO NOT REVISE. Contact Kathy Jacobitz at the Nebraska Poison Center (kjacobitz@nebraskamed.com) for permission to modify or to provide suggestions for updates.
Check https://www.regionviidhrs.com/chemical-team for the latest version. © Version 3.0, September, 2023
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Additional Resources from the Region VII Chemical Specialty Team

NEBRASKA POISON CENTER
Serving NE, ID, WY, American Samoa, and Federated States of Micronesia

NEBRASKA POISON CENTER
Serving NE, ID, WY, American Samoa, and Federated States of Micronesia

Call your Poison Center for patient-specific treatment recommendations

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#NHCPC24

OMHCC Pharmacy Workgroup

Real World Response
OMHCC Medications Have Helped…

Potassium Ferricyanide

- House fire smoke inhalation victims
- First responders and others exposed to homemade cyanide in college dorm
- Exterminator and others exposed to organophosphate insecticides
- Offutt AFB medical team responding to 2011 Fukushima nuclear disaster incident in Japan
- Located vaccines/immune globulin for tetanus, rabies, hepatitis A & B during public health incidents

OMHCC Pharmacy Workgroup

2019 Flood Response

Filled Prescriptions

- OMHCC received request to fill prescriptions for residents stranded in Riverside Lakes (Waterloo, NE)
  - Set up phone line in Poison Center; PC staff and rotators received requests and completed a spreadsheet
  - Nebraska Medicine Outpatient Pharmacy contacted residents' pharmacies to transfer and fill prescriptions; 24 were verified and filled within a few hours
  - Omaha Fire Dept picked up prescriptions and delivered them to residents by boat

OMHCC Pharmacy Workgroup

2019 Flood Response

Shelter Assistance

- Pharmacy Workgroup received several requests to assist people in shelters with medications and medical supplies.
  - Helped find solutions for people who needed multiple medications but were unable to reach their own physician or pharmacy.
  - Colostomy supplies and a knee brace were requested. OMHCC contacted a local pharmacy, which donated and delivered the supplies directly to the shelter.
  - Received requests for OTC medications for shelters, were donated by local pharmacies.

Provided Vaccines & Pharmacy Supplies

- Nebraska Medicine anticipated the need for additional tetanus vaccines and LifeNet flew them up from KC after I-29 closed.
- CHI Health also provided vaccines and was prepared to order additional doses.
- Provided 535 tetanus vaccines (plus needles/syringes) and 600 NS IV bags & saline flush syringes to support six health departments and fire departments.

OMHCC Pharmacy Workgroup

COVID-19 Response

- Recruited additional members to support vaccine administration: local nursing & pharmacy school faculty, additional retail pharmacists, Nebraska Pharmacists Association
- Developed and frequently updated a Vaccine Quick Reference Guide
  - Storage and Handling
  - Vaccine Differences & Practical Considerations

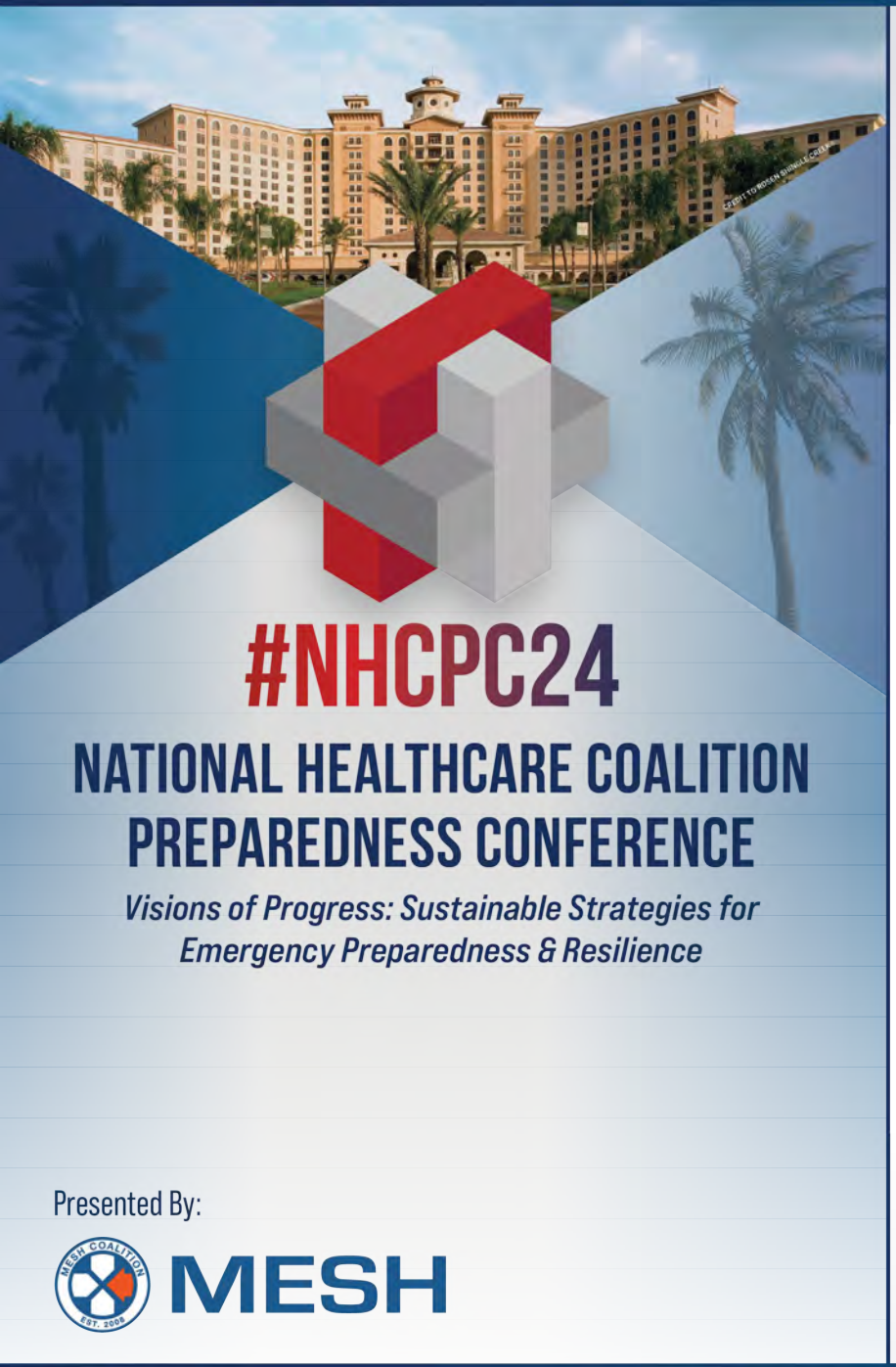
Omaha Metropolitan Healthcare Coalition
COVID-19 Vaccine Quick Reference Guide

COVID-19 Vaccines: Storage and Handling

Storage/Handling	Moderna (mRNA-1273)[1-3]	Pfizer-BioNTech (BNT162b2)[3-7]
Dry ice	Do not use	Thermal shipping container may be used as temporary storage for up to 30 days from delivery with proper dry ice replenishment.
Freezer storage	-25°C to -15°C • Protect from light until ready to use • Keep in original packaging • Do not store below -40°C	-80°C to -60°C • Protect from light until ready to use • Keep in original packaging • Expires 6 months from manufacturing
Refrigerator storage	2°C to 8°C for up to 30 days	2°C to 8°C for up to 5 days • Minimize room light exposure and avoid exposure to direct sunlight/ultraviolet light
Refrigerator thawing	• Thaw in refrigerator (2°C to 8°C) for 2.5 hours • After thawing, let vial stand at room temperature for 15 minutes prior to administering.	• Thaw in refrigerator (2°C to 8°C); may take up to 3 hours depending on number of vials • Must be at room temperature at least 30 minutes prior to diluting • Must dilute within 2 hours of removal from refrigerator or freezer
Room temperature thawing	• Thaw at room temperature (15°C to 25°C) for 1 hour • After thawing, let vial stand at room temperature for 15 minutes prior to administering. • Unpunctured vials may be stored between 8°C to 25°C for up to 12 hours.	• Thaw at room temperature (up to 25°C) for 30 minutes • Must be at room temperature at least 30 minutes prior to diluting • Must dilute within 2 hours of removal from refrigerator or freezer
In vial	• Stable for up to 6 hours from initial vial piercing at 2°C to 25°C • Discard after 6 hours	• Stable for up to 6 hours from dilution at 2°C to 25°C • Discard after 6 hours
In syringe	• Stable for up to 6 hours from initial vial puncture • Store in refrigerator (2°C to 8°C) or at room temperature (15°C to 25°C) • Keep out of direct sunlight	• Stable for up to 6 hours from dilution at 2°C to 30°C ± 2°C in polycarbonate and polypropylene syringes with stainless steel needles • Discard after 6 hours
Notes	• Never refreeze vaccines after thawing. • CDC states that pre-drawing vaccines may result in waste if more are drawn up than necessary, so they state that vaccines should be drawn only in preparation for immediate administration.	

MRSE and Full-Scale Exercise

- Lessons Learned
  - Organizations knew their roles in a chemical emergency incident.
  - Opportunity to educate on the role of the NE Poison Center for pharmaceutical needs and the CHEMPACK process.
  - The Pharmacy Workgroup and NE Poison Center were able to assess unmet pharmaceutical needs.



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