

Antidotal Supplies in Maine for Mass Casualty and Specialized Events 2012 Update

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Center (NNEPC)

Objective

- Provide Emergency Care Providers
 - Awareness of available antidotal supplies
 - Basic antidote mechanisms of action
 - Dosing and use guidelines
 - Procedures to obtain supplies

Special thanks to:

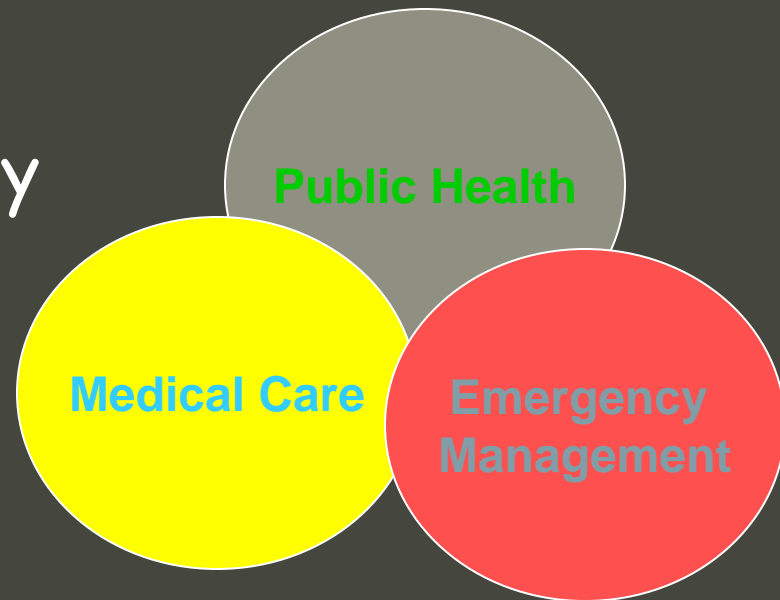
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NNEPC Director

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Consultant Pharmacist



Overlap

- All disaster begin locally
- Preparedness
 1. Personal
 2. Family
 3. Community
 4. Outreach



Partnerships



- **Maine CDC**
 - Public Health Emergency Preparedness (PHEP)
 - Joe Legee (207) 287-3288
- **MaineHealth, Maine Medical Center (MMC)**
 - Northern New England Poison Center (NNEPC)
- **Maine Emergency Management Agency (MEMA)**
 - Maine Task Force 1
- **Maine Emergency Medical Services (MEMS)**



Not if, but when..

Antidote Stockpiles have been purchased and positioned in Maine in anticipation of events that will exceed local resources. It is important that acute care medical providers have an understanding of what is available and how to properly access these materials.

<http://disaster.nlm.nih.gov/>

An overwhelming event

- Recognition that
 - Resources have/will be exhausted
 - Trained professionals
 - Equipment
 - Materials
- Recognition that
 - Standard operating procedures (SOP) inadequate
 - Alternate standards of practice
 - Alternate care sites

Tiered Response takes time

- Resource utilization

- Activation, utilization and exhaustion of *local* resource

- Recognition of needs

} mins

- Activation, utilization and exhaustion of *county/state/regional* resource

- Recognition of needs

} hrs

- Activation, utilization and exhaustion of *federal/national* resource

} days

Specialized event

- Antidotal supplies not stocked locally may be needed even when a small number of victims involved:
 - Organophosphate pesticide
 - Radioisotopes
 - Heavy metals
 - Hydrogen cyanide

Civilian Antidotal supplies

- Local
 - Community (Town, City, County)
 - First Responders, Hospitals, Clinics, Pharmacies
- State - MEMA, MaineCDC, RRCs, CST
 - Pharmaceutical cache
 - Vendor Managed Inventory
 - Force protection
- Federal
 - Strategic National Stockpile (SNS)
 - US Postal Service



State resource

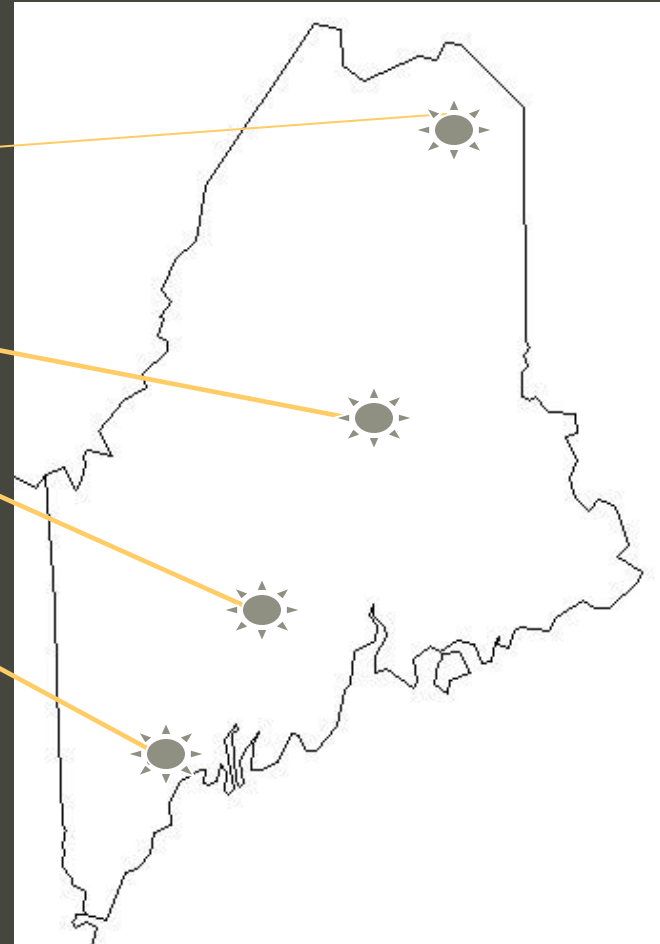


Maine Pharmaceutical Cache
Hubs (H) and Spokes (S) model

<http://chemm.nlm.nih.gov/>

Cache Locations hospital hubs (H)

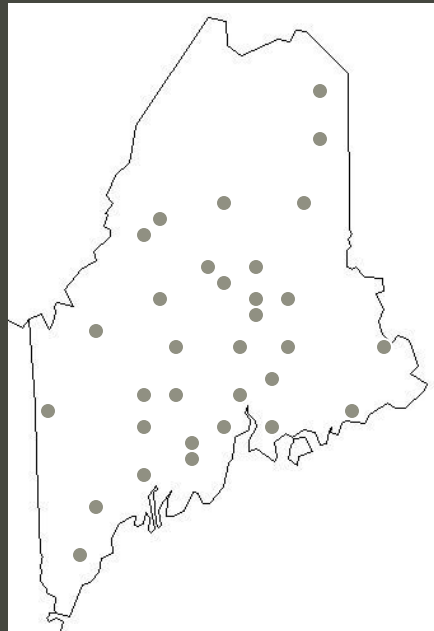
For more information contact
NNEPC 1-800-222-1222



Cache Locations

Spokes (S)

1. Blue Hill Memorial
2. Bridgton Hospital
3. Calais Regional Hospital
4. Cary Medical Center
5. Downeast Community Hospital
6. Franklin Memorial Hospital
7. Goodall Hospital
8. Houlton Regional Hospital
9. Inland Hospital
10. Maine Coast Memorial Hospital
11. Maine General - Augusta
12. Maine General - Waterville
13. Mayo Regional Hospital
14. Mercy Hospital



16. Miles Memorial Hospital
17. Millinocket Regional Hospital
18. Mount Desert Island Hospital
20. Northern Maine Medical Center
21. Parkview Adventist
22. Penobscot Valley Hospital
23. Redington Fairview General Hospital
24. Rumford Hospital
25. Sebasticook Valley Hospital
26. Southern Maine Medical Center
27. St. Andrews Hospital
28. St. Joseph Hospital
29. St. Mary's Regional Medical Center
30. Stephens Memorial Hospital
31. Waldo County General Hospital
32. York Hospital

Antidotes Content

Maine Pharmaceutical Cache

Hubs (H)

Nerve agent antidotes, Cyanide antidotes, Heavy Metal Chelators, Radiochelators, Antivirals

Spokes (S)

Nerve agent antidotes, Fomepizole, Burn supplies

State Antidote Supplies

1. Nerve Agent antidotes
2. Cyanide antidotes
3. Heavy metal chelators
4. Toxic alcohol therapies
5. Radiation countermeasures
6. Antivirals
7. Burn supplies

1. Nerve Agent antidotes

- Auto-injectors
 - Mark 1 kits (expired)
 - Atropine/Pralidoxime combo (Duodote) (H,S)
- Atropine powder (H, S)
- Pralidoxime powder (H)

Historical Example Nerve agent



- Matsumoto 1994, Tokyo subway March 20, 1995
 - Asahara (Matsumoto) leader of Aum Shinrikyo (supreme truth)
 - 5 containers Sarin punctured
- Patients
 - 6000 exposed (83% mild Sx)
 - 3227 ED patients (85% bypassed EMS)
 - 493 admitted
 - 12 died
 - EMS 135 Sxs, 33 admitted



Nerve Agents

- G (German) agents GA-F

- Tabun (GA)

- Least toxic in air, fruity smell, aging >40 hours

- Sarin (GB, substance 35) mostly Allies

- Most volatile, odorless, heavier than air, aging 5 hours
- May persist for 5 days

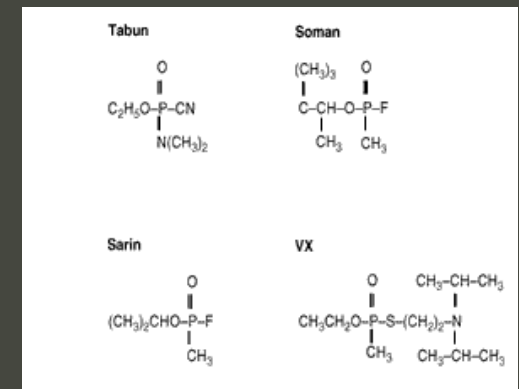
- Soman (GD)

- mostly Aging 2 minutes (*2-PAM Cl ineffective*)

- V (venomous, viscous) agents VE, VG, VM, V-gas

- VX (V-gas, VR 55, substance 33 soviet)

- Oily liquid, most toxic, dermal exposure more likely, aging >40 hours
- May persist for weeks



Cholinergic Toxidrome

- Muscarinic
 - SLUGBAM
 - Pinpoint pupils/eye pain most common
 - Bronchorrhea a life threat
- Nicotinic
 - MTWThF
- CNS
 - Rapid knockdown
 - Seizures



Muscarinic Effects (M): Glands, Smooth muscle

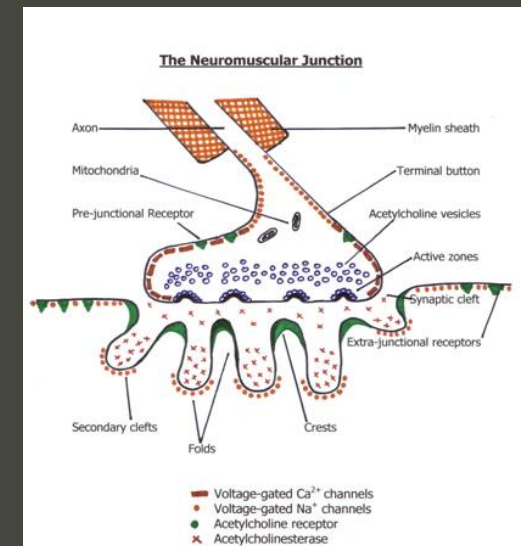
- **SLUGBAM** (*Dumbels, Sludge*)
 - Salivation
 - Lacrimation
 - Urination
 - GI emptying (V/D)
 - Bronchospasm, Bronchorrhea, Bradycardia
 - Abdominal Distress (nausea, pain)
 - Miosis
- Antidote: atropine



Killer B's

Nicotinic Effects (N): NMJ, Autonomic ganglia

- MTWThF (Monday-Friday)
 - Metabolic (hyperglycemia, acidosis)
 - Twitching
 - Weakness
 - Th (tachycardia, hypertension)
 - Flaccid paralysis
- Antidote: oxime (prior to aging)



CNS: Rapid Knockdown effects

- Anxiety
- Loss of consciousness
- Seizures
- Apnea

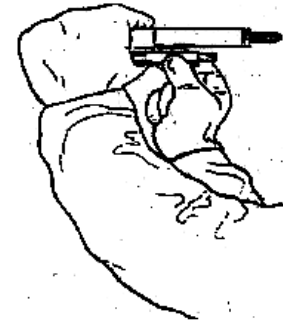
- Antidote: benzodiazepine



Nerve Agent treatment

- Atropine alone or in combo
 - Titrate to dry airway
 - Start with
 - Adults 2-6 mg q 5-10 min
 - Children 0.05 mg/kg q 2-10 min
 - Large total doses >10-20 mg rarely needed

Hand Position/Atropine



Viewgraph 3

Nerve Agent treatment

- Oximes (not useful for Soman)
 - Titrate to muscle strength (slower recovery)
 - 2-PAM chloride (protopam, pralidoxime) 300 mg/ml
 - Bolus
 - 1-3 auto injectors (1-3 x 600 mg)
 - 30 mg/kg IV over 30 min every 4-6 hrs
 - Maintenance
 - Continuous IV 550 mg/hr or 8 mg/kg/hr
 - Do not give more than 2000 mg IV in 1 hour

Nerve Agent treatment

- Benzodiazepines
 - Diazepam (CANA) 5 mg/ml, auto-injector 10 mg IM
 - Poorly/erratically absorbed IM
 - 0.2-0.5 mg/kg IV, typically 5-10 mg IV doses (non-auto-injector)
 - Midazolam** (Versed) 1 mg/ml, 5 mg/ml
 - Begin with 0.05 mg/kg IM/IV/PO doses (IV preferred route)
 - Usual adult dose 1-5 mg
 - Re-dose every 2-10 minutes
 - Titrate!

** preferred agent

Nerve Agent field dosing guidelines

- Mild to moderate
 - Mucous membrane Sxs but no neuro/pulmo compromise
 - Give 1 Auto-injector, re-eval q 5-10 minutes
 - Titrate atropine to secretions/chest symptoms
- Severe
 - Neuro/pulmo compromise
 - Give 3 Autoinjectors, re-eval q 5-10 minutes
 - May require 15-20 mg Atropine in severe cases
 - Titrate atropine to secretions/chest symptoms

 - Also give benzodiazepine

2. Cyanide Antidotes

- Cyanide Antidote Kit (H, S)
 - Sodium nitrite powder (H, S)
- Hydroxocobalamin (H, S)

Historical Example

- Jonestown, Guyana 1978
 - Rev. Jim Jones caused mass suicide/murder of about 900
 - Cyanide-laced Flavor-Aid



Clinical Manifestations

- HCN inhalation - rapid Sx
 - 0-30 sec Dyspnea, Dizzy, Anxiety, HA, N/V, Coma
 - 30-60 sec Unconsciousness
 - 60-90 sec Seizures, Apnea
 - >90 sec Cardiac Arrest
 - Cherry red skin, retinal veins (\downarrow A-V O₂ gradient)
- Cyanogen chloride - slower Sx
 - Eye, mucous membrane irritant
 - Chest tight, cough
- Sodium/Potassium cyanide salts - slowest Sx
 - Coma, Seizures
 - Severe acidosis

Cyanide Antidote Kit

Taylor, Lilly, Pasadena



- Methemoglobin-inducers (oxidizes Fe^{2+} to Fe^{3+})
- Step 1
 - Nitrites (amyl - inhaled, sodium - infused)
- Step 2
 - Sodium thiosulfate administered is converted by
 - Sulfane-Albumin
 - Rhodanese
 - To thiocyanate SCN^-

Cyanokit®

- Direct Chelator

- Hydroxocobalamin (Cyanokit®)

- Approved in US Dec. 2006

- 5 g IV for adults, 70 mg/kg children (2.5 g)

- Marketed specifically to EMS

- Safer in concurrent CO poisoning e.g. fire victims



Treatment guidelines for HCN

- Inhalational exposure is rapidly fatal by causing apnea leading to hypoxic cardiac arrest
- Prior studies demonstrate very poor outcomes in cardiac arrest patients
- Minimally symptomatic patients show good recovery upon removal from HCN source.
- Moderate to severely ill patients with vital signs present should be considered for antidotal therapy

3. Heavy Metal Chelators

- Dimercaptopropanol (BAL) (H)
- Edetate calcium disodium (EDTA) (H)
- Dimercaptopropanesulfonic acid (DMPS) (MMC, EMMC)
- Deferoxamine (H)

Historical Example



Daniel Bondeson, pictured here, worked at a nursing home and on his family's potato farm.

Poisoning suspect's death ruled suicide

Authorities: 'Important information' left in suicide note
Tuesday, May 6, 2003



VIDEO

Police in New Sweden, Maine, are looking at a parishioner in an arsenic poisoning case at a church.

PLAY VIDEO

NEW SWEDEN, Maine (CNN) -- The principal suspect in the arsenic poisonings here left behind a suicide note containing "important information" that requires further investigation into the plot that sickened more than a dozen churchgoers and killed one, authorities said Tuesday.

Authorities did not elaborate on the contents of the note from Daniel Bondeson, 53, who died of a self-inflicted gunshot wound to the chest Friday night after being rushed to a hospital. The state medical examiner's office ruled the death a suicide Tuesday.

Steve McCausland, a spokesman for the Maine Department of Public Safety, confirmed that a note was found in Bondeson's home.

"Investigators say that 'based upon important information contained in that note, we will be continuing our investigation into the poisoning homicide in New Sweden,'" McCausland said.

He said investigators met to discuss the case with representatives of the state attorney general's office, the state police crime laboratory and the chief medical examiner's office.

The poisonings have sent shock waves through this tight-knit community of about 600 in northern Maine. A 78-year-old caretaker of Gustaf Adolph Lutheran Church died, and 15 church members were sickened, three of them critically, after drinking arsenic-laced coffee at the church April 27.

Bondeson attended a bake sale the day before, but authorities have said he was not in the church that Sunday.

Soon after Bondeson's death, authorities said they believed he was linked to the poisonings -- possibly motivated by a church dispute -- and that he might not have acted alone.

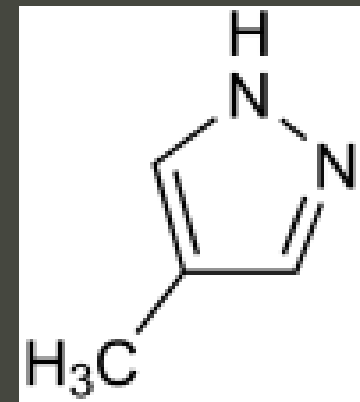
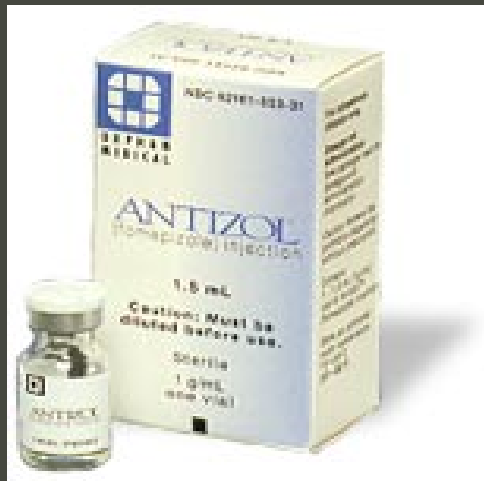
"I'm not prepared to say that

Chelating agents

	Chelation uses	Route of administration	Advantages	Disadvantages
BAL	Lead, Mercury Arsenic	IM only	Useful for patients unable to take po	Painful. N/V, fever, HTN, tachycardia Not if Peanut allergy, G6PD def.
DMPS	Mercury Arsenic	PO/IV	Water soluble	limited availability in the United States
CaNa₂EDTA	Lead	IV or IM	Useful for patients unable to take po	AKI, fever, myalgias, ↑LFTs Only use combo BAL
DMSA (Succimer)	Lead, Mercury Arsenic	PO (United States) IV/IM (China)	PO admin. tolerated Doesn't redistribute	N/V/D, ↑LFTs Preg class D

4. Toxic Alcohol therapies

- Fomepizole (S)
 - 4-methyl pyrazole (4-MP)



Historical Example

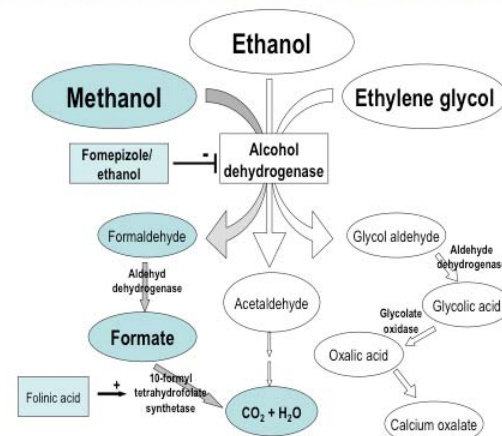
- **Man found guilty of killing wife w/ antifreeze** Posted 7/2/2008
 - WOBURN, Mass. (AP) — A former Missouri radio reporter was convicted Wednesday of killing his wife by poisoning her Gatorade with antifreeze and sentenced to life in prison without parole.
 - Prosecutors said he slowly poisoned his wife over several months and gave her a fatal dose on Sept. 4, 2004, because he was deeply in debt and wanted to cash in her \$250,000 life insurance policy. She slipped into a coma and died four days later.



Many toxic Alcohols

- Ethanol
- Methanol
- Isopropanol
- Ethylene Glycol
- Propylene Glycol
- Diethylene Glycol (DEG)
- Benzyl alcohol

Methanol and metabolism



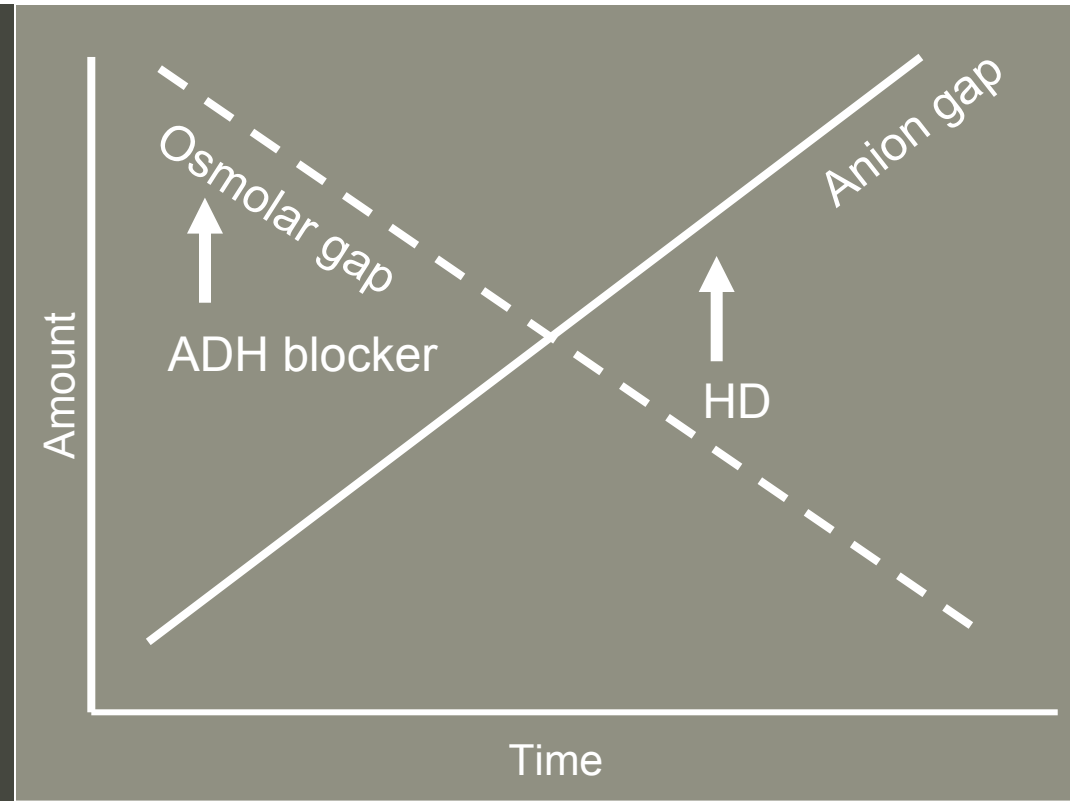
Adjusted from Hovda KE. PhD thesis 2005.

Oslo universitetssykehus



Toxic alcohols

- Early (Parent)
 - ↑ osmolality and osm gap
- Late (Metabolites)
 - ↑ acidosis



Toxic alcohol treatment

- Early therapies
 - block metabolism
 - **Fomepizole
 - Load 15 mg/kg IV up to 1.5 g (one vial) q12 hours
 - Ethanol
 - PO/IV
 - Not useful late
- Early and late therapies ** preferred agent
 - Hemodialysis
- Most useful labs
 - Electrolytes, renal function, lactate, VBG
 - Toxic alcohol screen (Bangor, Scarborough)

Osmolality is a poor screening tool for small ingestions

5. Radiation countermeasures

- Potassium Iodide powder (H,S)
- Pentetate Calcium Trisodium (DTPA) (MMC)
 - Zinc, Calcium
- Prussian Blue (Radiogardase) (H, Augusta)

<http://www.remm.nlm.gov/>

Historical example

- (Nov 2006) 43 yo male to ER vomiting/bloody diarrhea
 - Eating at local Sushi restaurant in London UK
- ER evaluation Day 1
 - normal labs, DC'd with Cipro script
- Returned Day 4 more diarrhea
 - Admitted Cipro → Flagyl WBC 17K
- Sicker Day 6 PTL 63 WBC 1.8 PMN 1.1
 - Day 9 WBC 0.3 PMN 0.3
 - Day 11 WBC 0.1 PMN 0
 - Urine metals: thallium, antimony "slightly high"
 - Given Prussian Blue, GCSF
 - Listed for stem cell transplant
 - Day 20 Died
 - Day 24 Urine: Polonium 210 "high"



Radiation Exposure pathways

- Nuclear detonation
 - Irradiation, Inhalation
- Nuclear power plant criticality
 - Irradiation, Inhalation
- Dirty bomb or Rad Dispersion Device (RDD)
 - Shrapnel, Inhalation, Incorporation

Blocking agent

- Potassium Iodide
 - Prevent thyroid uptake of I131
 - Early radionuclide released in plume of power plant criticality
- Efficacy
 - 1 hour 90%
 - 4 hours 40%

Daily Dosage (According to FDA)			
Group	KI Dose (mg)	# of 65 mg tablets	# of 130 mg tablets
Adults over 18 years	130	2	1
Pregnant or lactating women			
Adolescents over 12 yrs through 18 yrs who weigh at least 150 pounds	130	2	1
Adolescents over 12 yrs through 18 yrs who weigh less than 150 pounds	65	1	1/2
Children over 3 yrs through 12 yrs	65	1	1/2
Children over 1 month through 3 years	32.5	1/2	1/4
Babies - Birth through 1 month*	16.25	1/4	1/8

Radionuclides

- Ferric Hexacyanoferrate (Radiogardase)
 - Internal Contamination: Cs 137, Th 201
- Diethylenetriamene pentacetate (DTPA)
 - Zn-DTPA (pregnancy, prolonged treatment)
 - May be given via neb for inhalational exposure
 - Internal Contamination: Pu 239, Am 241, Cm 244

6. Influenza supplies

- Personal Protective Equipment (PPE)
 - Masks, gloves, gowns
 - Droplet, Airborne precautions
- Neuraminidase inhibitors
 - Oseltamivir (Tamiflu)* (CDC warehouse)
 - 30 mg, 45 mg, 75 mg capsules
 - Zanamivir (Relenza)* (CDC warehouse)
 - Diskhaler (5mg doses)

<http://www.cdc.gov/flu/pdf/professionals/antivirals/clinician-antivirals-2011.pdf>

*use restricted to pandemic only

Historical example

- Pandemic (novel strains, antigenic shift)
 - 1918 (avian) H1N1 Spanish Flu
 - 500,000 US deaths, 40M world deaths
 - 1957 H2N2 Asian flu
 - 70,000 US deaths
 - 1968 H3N2 Hong Kong flu
 - 34,000 US deaths
 - 2004-2005 H5N1 Bird Flu
 - 2009-2010 H1NI Swine flu
 - US
 - 61 million cases, 275,000 hospital admits, 12,500 deaths (sick, elderly)
 - World
 - <20,000 death world-wide

Endemic Influenzas

- Orthomyxoviruses
 - Influenza types A, B, C; subtypes H1-16, N1-9
 - Incubation period 1-4 days (infectivity 24 hours prior to Sxs)
- Seasonal Epidemic Flu (annual, endemic)
 - 5-15% population
 - 40,000 US deaths/yr, 500,000 World deaths/yr (3-5M cases World/yr)
 - deaths worsening of cardiopulmonary disease

Influenza treatment

- Follow CDC
 - Lab testing guidelines
 - Vaccination guidelines
- Treatment
 - Symptomatic care
 - Antivirals
 - Treatment
 - Oseltamivir (Tamiflu) Adult 75 mg PO BID x 5-10 d
 - Zanamivir (Relenza) Adult 10 mg BID x 5-10 d
 - Prophylaxis
 - Up to 2 weeks in hospitals, long-term care facilities

7. Thermal Burn supplies

- Aquacel Ag dressings (H,S)
- SAF-Cleans AF Dermal Wound Cleaner (H,S)

Singer AJ, Dagum AB, Current Management of Acute Cutaneous Wounds, NEJM: 359:1037-1046, 2008.

<http://www.nlm.nih.gov/medlineplus/burns.html>

Historical example



Minor Burn Care

- Supportive Care
 - Comfort, Immobilization
 - IVF 2-4 cc/kg/BSA burn LR, Consider HCO₃
 - Analgesia Opioids
 - Cooling Tap water 15-25°C
 - Tetanus prophylaxis
- Specific Therapies
 - Debridement
 - Removal of devitalized tissue and contaminants
 - Escharotomy - should be performed by a Surgeon
 - Blister Management
 - Excise tense, large, disabling, hemorrhagic
 - Dressings
 - Antimicrobial, Moisture Control, Protection

Referral to a Burn Center

- >10% total body surface area (TBSA)
- Body areas
 - face, hands, feet, genitalia, perineum, large joints
- Full thickness burns
- Special agents
 - electrical, chemical
- Significant associated injury
 - inhalational injury, major trauma
- Special populations
 - Children, Special needs, significant medical co-morbidity



ABA Guidelines

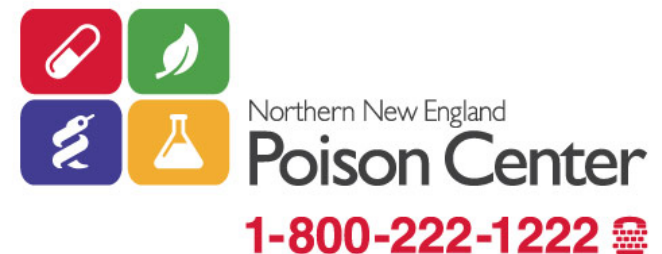
Burn Dressings

- Post debridement
- Dressing application
 - Apply to burned area
 - Secure with gauze
 - Leave in place until non-adherent



Antidote supply procurement

- Antidotes belong to the state of Maine
- State of Maine must approve use
 - State health official or designee
- Designee
 - Northern New England Poison Center (NNEPC)
 - Assist with appropriate indications/dosing regimen
 - Locate nearest cache supplies
 - Monitor inventories
 - Coordinate with Maine CDC



Use of expired materials

- During a mass casualty or in times of critical shortage, the use of materials beyond their Manufacturer-recommended shelf life (expiration date) may be considered.
- Prior approval should be obtained



Federal Resources forwardly deployed

CHEMPACK

Deployed throughout Maine.
For more information contact NNEPC
1-800-222-1222

CHEMPACK Locations

For more information contact
NNEPC 1-800-222-1222



Antidotes Content

CHEMPACK*

atropine/2-Pam/diazepam

*additional supplies required for administration

CHEMPACK

The CDC in Atlanta established CHEMPACK, which is the forward placement of Nerve Agent (NA) antidotes throughout the United States

Maintenance of CHEMPACK in Maine is the responsibility of the Maine CDC, Office of Public Health Emergency Preparedness (OPHEP)



CHEMPACK (EMS & Hospital Containers)

- CHEMPACK - EMS Containers (9):
 - For emergency responders at the scene
 - More single-use auto-injectors
 - some pediatric doses
- CHEMPACK - Hospital Container (1):
 - For hospital use
 - More multiuse vials

Hospital CHEMPACK			
1000 People = HOSPITAL CHEMPACK	Unit Pack	Cases	QTY
Mark 1 auto-injector	240	2	480
Atropine Sulfate 0.4mg/ml 20ml	4 of 25	9	900
Pralidoxime 0.6 g inj 20ml	46 of 6	10	2760
Atropen 0.5 mg	12 of 12	1	144
Atropen 1.0 mg	12 of 12	1	144
Diazepam 5mg/ml auto-inject	150	1	150
Diazepam 5 mg/ml vial, 10ml	5 of 5	26	650
Sterile water for injection (SWFI) 20cc Vials	4 of 25	28	2800

EMS CHEMPACK			
454 People = Total EMS CHEMPACK	Unit Pack	Cases	QTY
Mark 1 auto-injector	240	5	1200
Atropine Sulfate 0.4mg/ml.20ml	4 of 25	1	100
Pralidoxime 0.6 g inj 20ml	46 of 6	1	276
Atropen 0.5 mg	12 of 12	1	144
Atropen 1.0 mg	12 of 12	1	144
Diazepam 5mg/ml auto-inject	150	2	300
Diazepam 5 mg/ml vial, 10ml	5 of 5	2	50
Sterile water for injection (SWFI) 20cc Vials	4 of 25	2	200

Typical spectrum of severity

- For every 1,000 casualties expect*
 - 30% mild exposures (1 dose)
 - 40% moderate exposures (2-3 doses)
 - 30% severe exposures (3+ doses)
- * For every casualty, expect 3-15 who will need 'to be checked,' but will not require antidote.

CHEMPACK Procurement

- Call to Northern New England Poison Center (NNEPC) 1-800-1222
- Once NNEPC approves distribution, the hospital will
 - Move entire CHEMPACK and supplies to ED or loading dock or remove specific drugs quantities for transport
 - CDC in Atlanta automatically notified by alarm

Pre-prepared CHEMPACK Supplies

- Type:
 - Needles (18-gauge, 25-gauge in 1 1/2- and 5/8-inch)
 - Syringes (5ml, 20ml)
 - Alcohol wipes
- How packaged:
 - 1 dose/small zip-lock bag
 - 10 doses/large zip-lock bag
- Instructions on each zip-lock bag:
 - Drug form and concentration
 - Route of administration
 - Dosing instructions by age and severity

Atropine Injection - Equipment

Needles:

18-gauge

25-gauge 1 1/2 inches

25-gauge 5/8 inches

Use:

Draw up (for push or drip)

Adult IM injection

Pediatric IM injection

Syringes:

5-ml

20-ml

Use:

Draw up and injection for IM or IV push

Draw up and injection for IV Drip

Diazepam Injection - Equipment

Needles:

18-gauge

25-gauge 1 1/2 inches

25-gauge 5/8 inches

Use:

Draw up for IM or IV push injection

Adult IM injection

Pediatric IM injection

Syringes:

5-ml

Use:

Draw up and injection for IM or IV push

Pralidoxime IM Injection (and reconstitution) - Equipment

Needles:

18-gauge

25-gauge 1 1/2 inches

25-gauge 5/8 inches

Use:

Reconstitute, draw up

Adult IM injection

Pediatric IM injection

Syringes:

5-ml

Use:

Reconstitute, draw up and IM injection

Pralidoxime IV Injection (and reconstitution) - Equipment

Needles:

18-gauge

Use:

Reconstitute, draw up, inject port (if necessary)

Syringes:

20-ml

Use:

Reconstitute, draw up AND IV push or IV drip

Other supplies within the state

- Vendor-Managed Inventory
 - Pharmacy chains and distributors
 - Used instead of or in conjunction with SNS supplies
 - Diverse inventory, more rapid availability than SNS
- Employee/Force protection
 - US Postal service
 - Ciprofloxacin and Doxycycline (MMC and EMMC)
 - Maine EMS
 - Atropine/2-PAM auto-injectors
 - CDC warehouse
 - Antivirals
 - N95 masks
 - Gowns, Gloves, Masks

Strategic National Stockpile (SNS)

- Requests are made only with approval from the Maine Governor through the Maine CDC to 'request SNS deployment.'
 - Request items in response to a specific known need/threat
- **Pre-Prepared Push Packages** are targeted for deployment within twenty-four hours of federal approval.
- **Push Package contents:**
 - Antibiotics
 - Nerve agent antidotes
 - Antitoxins
 - Life-support medications
 - IV administration supplies
 - Airway maintenance supplies
 - Medical surge items



A single federal MCI “push package” weighs 94,424 pounds and fills either one wide-body aircraft or eight tractor trailers.

Summary

- A number of (State and Federal) caches of anticipated antidotes and supplies exist within Maine
- Acute care providers should have an awareness of what is available
- The NNEPC is a resource to guide you with the localization and utilization of antidotal supplies
 - No state or forwardly deployed federal antidote should be used without calling the PC
 - 1-800-222-1222