

The National Library of Medicine's Downloadable, Online, and Smartphone Tools for First Responders and Others

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National Library of Medicine

NATIONAL INSTITUTES OF HEALTH ♦ U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES

Learning Objectives

- Brief introduction to the National Library of Medicine's toxicology and environmental health databases, and other NLM resources.
- Overview of NLM's three tools to assist first responders and others: WISER, CHEMM, and REMM.



U. S. National Library of Medicine

- Part of the U. S. National Institutes of Health
- World's largest biomedical library

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

The screenshot shows the homepage of the U.S. National Library of Medicine. At the top, there is a navigation bar with the NLM logo, the text "U.S. National Library of Medicine National Institutes of Health", a search bar, and social media icons. Below the navigation bar, the main content area is divided into several sections:

- Databases:** A list of databases including PubMed/MEDLINE, MeSH, UMLS, ClinicalTrials.gov, MedlinePlus, TOXNET, Images from the History of Medicine, LocatorPlus, and All NLM Databases & APIs.
- Household Products Database:** A prominent feature with a blue shopping basket icon and buttons for "Products", "Health Effects", "Ingredients", and "Manufacturers". Below it, a description states: "Your guide to information on the potential health effects of chemicals contained in more than 10,000 household products."
- Find, Read, Learn:** A list of services including "Search biomedical literature", "Find medical terminologies", "Search NLM collections", "Read about diseases", "Learn about drugs", "Explore history", "Find a clinical trial", "Use a medical dictionary", and "Find free full-text articles".
- Explore NLM:** A section with a dark blue header containing links to "About NLM", "Health Information", "Library Catalog & Services", "History of Medicine", "Online Exhibitions & Digital Projects", "Information for Publishers", and "Visit the Library".
- Research at NLM:** A section with a dark red header containing links to "Human Genome Resources", "Biomedical Research & Informatics", "Environmental Health & Toxicology", "Health Services Research & Public Health", "Health Information Technology", and "Mobile Gallery".
- NLM for You:** A section with a dark green header containing links to "Grants & Funding", "Meaningful Use Tools", "Training & Outreach", "Network of Medical Libraries", "Regional Activities", "Jobs at NLM", and "Mobile Gallery".
- News & Events:** A section with a light blue header containing a list of recent news items, such as "Regenstrief and IHTSDO Start Collaborative Efforts [PDF] (07/31/12)" and "NLM Acquires Collection of Materials Relating to American Civil War Surgeon S. Weir Mitchell (07/16/12)".
- Footer:** Contains copyright information, contact details, the USA.gov logo, and publication dates: "First published: 10 October 1993", "Last updated: 31 July 2012", and "Permanence level: Permanent: Dynamic Content".



SIS Environmental Health & Toxicology

- Founded in 1967 as the Toxicology Information Program
- Expanded in mid-1990s to include environmental health

The screenshot shows the website interface for the Environmental Health & Toxicology program. At the top, it displays the U.S. Department of Health & Human Services logo and the website URL www.hhs.gov. The main header features the program name 'Environmental Health & Toxicology' and the National Library of Medicine logo. Below the header is a navigation menu with links for 'SIS Home', 'About Us', 'Site Map & Search', 'SIS News', and 'Contact Us'. A search bar is located on the right side of the header.

Two blue arrows point to the 'Find Information About...' dropdown menu on the left, which includes options like 'Especially For', 'Search TOXNET® Databases', and 'Other Professional Resources'. Another blue arrow points to the 'Search TOXNET' search box on the right, which contains the text 'TOXNET - Collection of databases on hazardous chemicals, toxic releases, and environmental health' and a search input field with the example '(e.g. mercury, asbestos)'. A third blue arrow points to the 'Drug Information' link in the 'For Information About...' section, which provides information about drug data from NLM and other agencies.

At the bottom of the page, there is a footer with copyright information, a 'Last updated' date of 26 April 2012, and a 'First published' date of 15 March 2010.



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TOXNET® (TOXicology Data NETwork)

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

- Databases on toxicology, hazardous chemicals, environmental health, and toxic releases.
- Accessible free of charge

The screenshot shows the TOXNET website interface. At the top left is the NLM logo and 'United States National Library of Medicine'. The main header is 'TOXNET Toxicology Data Network'. Navigation links include 'TOXNET Mobile Access', 'SIS Home', 'About Us', 'Site Map & Search', and 'Contact Us'. A secondary navigation bar has 'Env. Health & Toxicology' and 'TOXNET'. The main content area features a 'TOXNET - Databases on toxicology, hazardous chemicals, environmental health, and toxic releases.' section. Below this are three main columns: 'Select Database' with a list of 13 databases (ChemIDplus, HSDB, TOXLINE, CCRIS, DART, GENETOX, IRIS, ITER, LactMed, Multi-Database, TRI, Haz-Map, Household Products, TOXMAP); 'Search All Databases' with a search box and 'Search', 'Clear', and 'Help' buttons; and 'Env. Health & Toxicology' with a 'VISIT SITE' button and a 'Support Pages' section listing Help, TOXNET FAQ, TOXNET Update Status, Fact Sheet, Database Description, Training Manual & Schedule, and News. An 'Additional Resources' section at the bottom left lists CPDB and CTD.



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Mobile-optimized Web interface

YOUR SOURCE FOR THE LATEST SEARCHING INFORMATION



NLM TECHNICAL BULLETIN

U.S. NATIONAL LIBRARY OF MEDICINE | NATIONAL INSTITUTES OF HEALTH

[Current Issue](#) | [Archive](#) | [Indexes](#) | [About](#) | [St](#)

Mobile TOXNET Access

Mobile TOXNET Access. NLM Tech Bull. 2012 Jan-Feb;(384):b10

2012 February 15 [posted]

Now you can access the NLM TOXNET with any mobile device.

TOXNET

 HSDB	>
 TOXLINE	>
 CCRIS	>
 DART	>
 GENE-TOX	>
 IRIS	>
 ITER	>
 LactMed	>
 TRI	>
 DIRLINE	>

<http://toxnet.nlm.nih.gov/pda/>



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Mobile-optimized Web interface

Haz-Map®

Health effects of exposure to chemicals and biologicals at work.

Links jobs and hazardous tasks with occupational diseases and their symptoms.



<http://hazmap.nlm.nih.gov/index.php>

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NLM Disaster Information Management Research Center (DIMRC)

Ensure access to health information and effective use of libraries and librarians when disasters occur, and for planning and training purposes.

The screenshot shows the NLM Disaster Information Management Research Center (DIMRC) website. The header includes the U.S. Department of Health & Human Services logo and the URL www.hhs.gov. The main title is "Disaster Information Management Research Center" with the tagline "IMPROVING ACCESS TO DISASTER HEALTH INFORMATION". The page is organized into several sections:

- Navigation:** SIS Home, About Us, Site Map & Search, SIS News, Contact Us.
- Search:** Search This Site (with a search bar).
- Disaster Types and Topics:** Emergency Response Tools, Disaster Health Literature, Disaster Information Specialist, Librarians & Disasters, NLM Projects & Research, Search TOXNET® Databases, Health Organizations.
- Disaster Information Apps and Mobile Web Sites:** A central image showing a hand holding a tablet displaying various app icons.
- In the Spotlight:** Droughts: Health-Related Resources, Deadline Extended to August 20: New Funding Opportunity for Disaster Health Information Outreach & Collaboration Projects 2012, Wildfires: Health-Related Resources, It's Hurricane Season - Be Prepared, New Topic Page on Web Apps and Mobile Web Sites, New HHS Preparedness Facebook Apps.
- Search Our Web Pages:** A search bar with a "Search" button.
- A to Z Index of Resources:** A grid of letters A through Z for navigation.
- Stay Connected:** Join the Listserv, Subscribe to RSS, Follow us on Twitter, Bookmark and share.
- About the Center:** Fact Sheet, News, Publications about the Center, Staff Publications, Promotional Materials, Collaborations & Partnerships.
- Disaster Medicine and Public Health Literature:** Resource Guide, PubMed (Database of biomedical journal citations and abstracts).
- HazMat/CBRN (Chem, Bio, Rad, Nuclear):** WISER: Wireless Information System for Emergency Responders (System to assist first responders and first receivers in hazardous material incidents. Version 4.4 now available!), REMM: Radiation Emergency Medical Management (Guidance about clinical diagnosis and treatment of radiation injuries during radiological and nuclear emergencies), CHEMM: Chemical Hazards Emergency Medical Management (Guidance on planning, response and recovery related to chemical mass casualty incidents).
- New Documents from the Resource Guide:** OCHA on Message: The Cluster Approach, More..., New in PubMed, Mainstreaming gender in disaster (review), More..., Disaster News.
- Find Disaster Organizations:** A widget with a search bar and a dropdown menu for "Limit to" (set to "All").



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

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NLM Disaster and Emergency Response Tools

- Wireless Information System for Emergency Responders (WISER) --- released about eight years ago
- Chemical Hazards Emergency Medical Management (CHEMM) --- released in mid-2011
- Radiation Emergency Medical Management (REMM) --- released about four years ago



Wireless Information System for Emergency Responders (WISER)



www.wiser.nlm.nih.gov



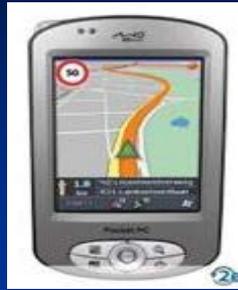
National Library of Medicine

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WISER Platforms – A Little History



Palm Pilot



Pocket PC



Laptop

August 2011



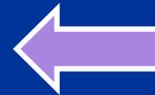
Android



BlackBerry



iPhone

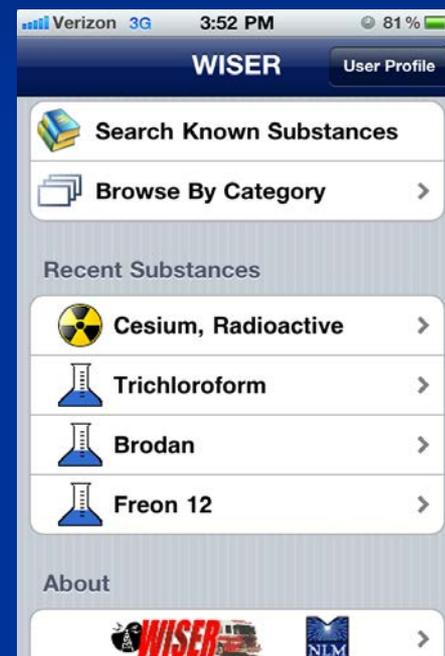
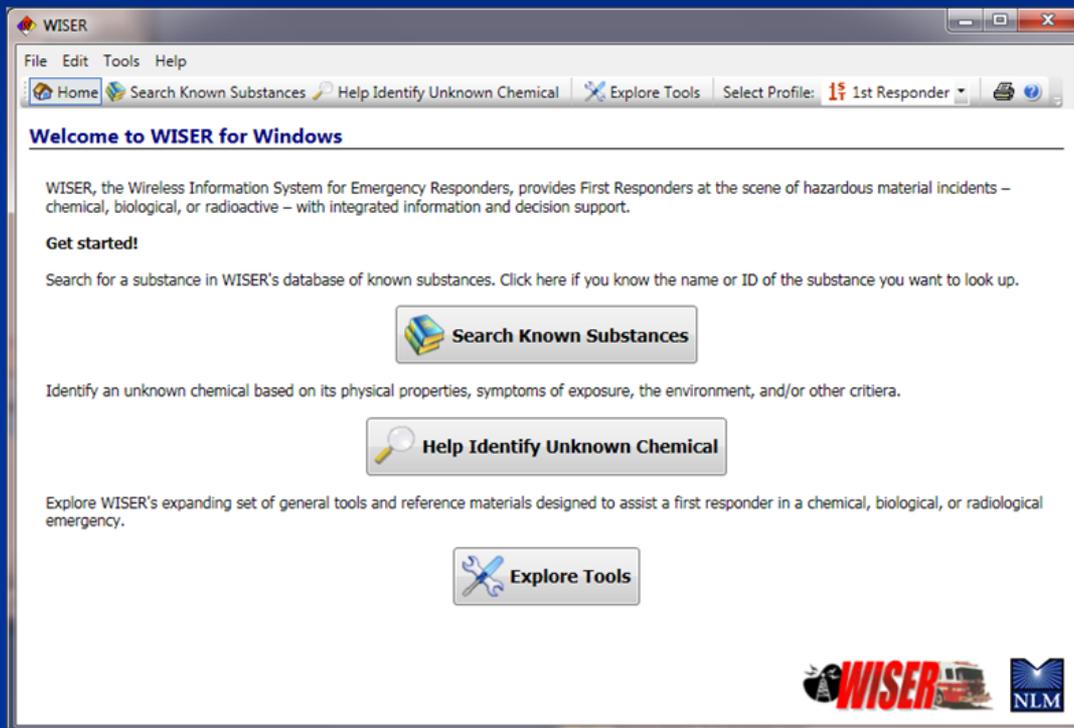


WebWISER



WISER Basics

Either you know what you're dealing with...



... or you don't!



Examples of Recent Announcements

August 24, 2011: Version 1.0 of WISER for Android available

January 19, 2012: Protective distance mapping for WebWISER available

March 1, 2012: Version 2.0 WISER for iPhone/iPod touch available

July 1, 2012: Version 3.0 WISER 3.0 for iOS available



WISER for iPhone/iPod touch 2.0 included:

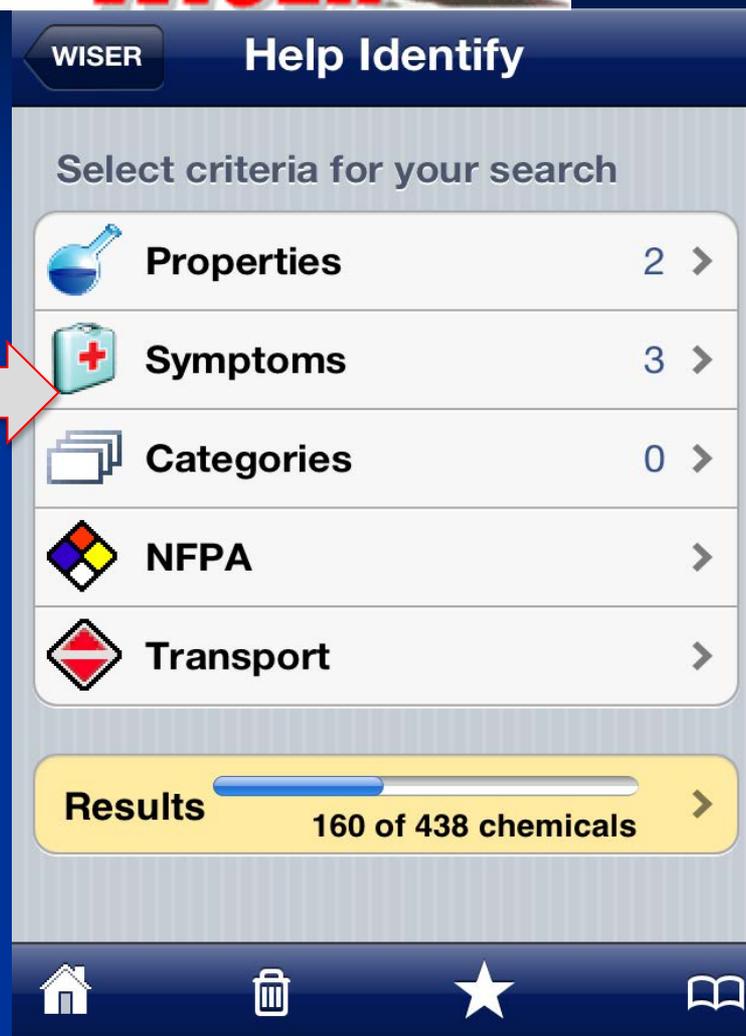
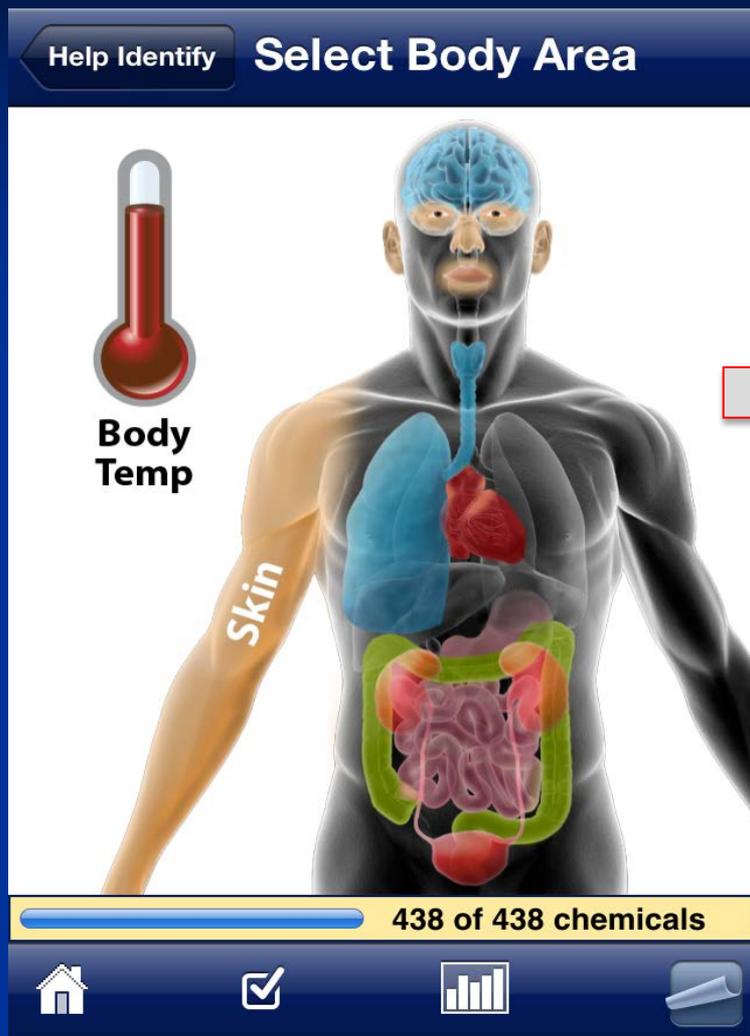
Fully featured implementation of **Help Identify Chemical**

Identify using physical properties, signs/symptoms, categorization, NFPA placards, and transportation containers

Can save a help identify search for later recall **and** **freely search the result list** using any identifier



As an app



WISER for iOS 3.0 added native support for the iPad in addition to support for the iPhone and iPod touch.

WISER's full set of known substances

WISER's popular Help Identify Chemical capability.

WISER's protective distance mapping feature.

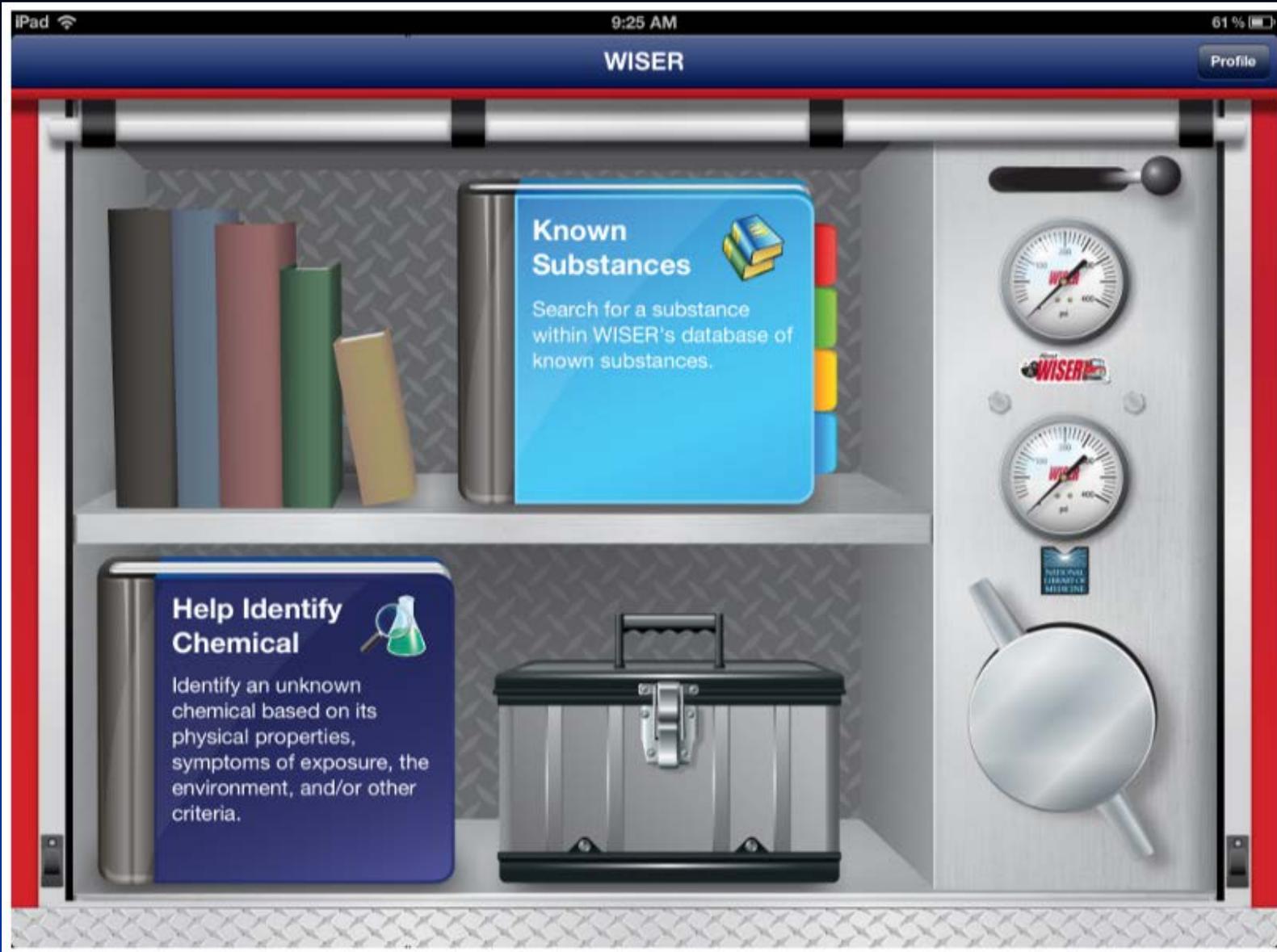
and

Various updates for iPhone/iPod touch devices



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iPad 9:26 AM 59%

Chlorine Hazmat	NFPA Classification
<ul style="list-style-type: none"> DOT Emergency Guide > WMD Guide > Protective Distance > Protective Distance Map > NFPA Classification > Fire Potential > Fire Procedures > Equipment (PPE) > Reactivities > Other Fire Hazards > Cleanup Methods > Disposal Methods > 	<p>Chlorine CAS RN: 7782-50-5</p> <hr/> <p>NFPA Classification</p> <div style="text-align: center;"> <p>The image shows a diamond-shaped hazard label divided into four quadrants. The top quadrant is red with the number '0'. The bottom quadrant is yellow with the number '0'. The left quadrant is blue with the number '4'. The right quadrant is white with the letters 'OX'. The diamond is outlined in black.</p> </div> <p>Health: 4 (Extreme) Materials that, on very short exposure, could cause death or major residual injury, including those that are too dangerous to be approached without specialized protective equipment. A few whiffs of the vapor or gas can cause death, or contact with the vapor or liquid may be fatal, if it penetrates the fire fighter's normal protective gear. The normal full protective clothing and breathing apparatus available to the typical fire fighter will not provide adequate protection against inhalation or skin contact with these materials.</p> <p>Flammability: 0 (Minimal) This degree includes any material that will not burn under typical fire conditions.</p> <p>Instability: 0 (Minimal) This degree includes materials that are normally stable, even under fire exposure conditions, and that do not react with water. Normal fire fighting procedures may be used.</p> <p>Special: Oxidizer The material is an oxidizer.</p>



IPad 10:56 AM Not Charging

Chlorine | **Protective Distance Map**

- Search
- Key Info
- Identification
- Equipment (PPE)
- Protective Distance
- Protective Distance Map**
- Fire Procedures
- Reactivities
- Treatment
- Basic
- Properties
- Hazmat
- Medical
- Environment

Spill Info.

- Display Units
 - Standard
 - Metric
- Map Type
 - Standard
 - Satellite
 - Hybrid
- Overlay
 - Color
 - Opacity 0.3

Large spill at night time
Initial isolation = 2000 ft, downwind = 5.0 mi



Pad 9:25 AM 60%

Help Identify Select Body Area

Add Skin

peeling/exfoliation	29
itching	160
dry skin	15
skin burns/burning	181
sweating	51
skin swelling	152

Bo Ter

237 of 438 chemicals



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iPad 9:32 AM 58%

Help Identify

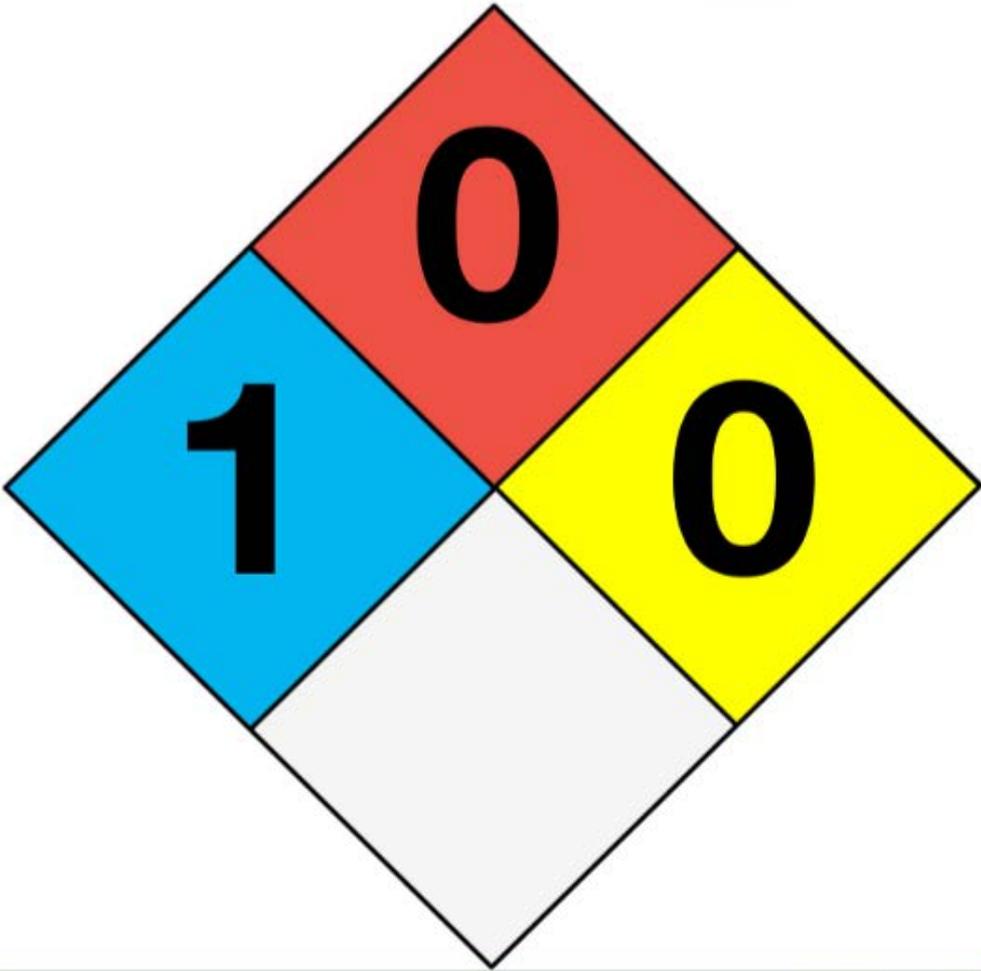
NFPA 704

Select criteria for your search

- Properties 2 >
- Symptoms 0 >
- Categories 0 >
- NFPA** Selected >
- Transport Selected >

Results

2 of 438 chemicals



2 of 438 chemicals

The image shows a screenshot of an iPad application interface for identifying chemicals. The top status bar displays 'iPad', '9:32 AM', and '58%' battery. The app title is 'Help Identify'. The search criteria are set to 'NFPA 704'. The search results show '2 of 438 chemicals'. The main display area features a large NFPA 704 hazard diamond with the following values: 1 (blue, health hazard), 0 (red, flammability), and 0 (yellow, reactivity). The bottom of the screen also shows '2 of 438 chemicals'.



CBRNE Information in WISER

- ~420 Chemical Agents
- ~20 Radiological Agents
- CDC Category A Biological Agents



Radiation Emergency Medical Management (REMM)

U.S. DEPARTMENT OF HEALTH & HUMAN SERVICES

REMM RADIATION EMERGENCY MEDICAL MANAGEMENT
Guidance on Diagnosis & Treatment for Health Care Providers

REMM HOME | CONTACT US | SITE MAP | ABOUT REMM

SEARCH

WHAT KIND OF EMERGENCY? | INITIAL EVENT ACTIVITIES | PATIENT MANAGEMENT | MANAGEMENT MODIFIERS | TOOLS & GUIDELINES

WHAT KIND OF EMERGENCY?

- Radiological Dispersal Devices: Dirty Bomb, Other Dispersal Methods
- Radiological Exposure Devices: Hidden Sealed Source
- Nuclear Explosions: Weapons, Improvised Nuclear Devices
- Nuclear Reactor Accidents
- Transportation Accidents
- Discovering an Incident

INITIAL EVENT ACTIVITIES

- On-site Activities
- Triage Guidelines
- Transport Victims to Appropriate Venue(s)
- Hospital Activities

OTHER AUDIENCES

- First Responders in the Field
- Mental Health Professionals
- Hospitals
- Public Information Officers
- Radiation Safety and Protection
- Response Planning
- Practices and Drills
- Veterinarians

WHAT KIND OF EMERGENCY?

- Choose Appropriate Algorithm: Evaluate for Contamination/Exposure
- Contamination
- Exposure (Acute Radiation Syndrome)
- Exposure + Contamination

MANAGEMENT MODIFIERS

- Radiation + Trauma
- Burn Triage and Treatment
- Mass Casualty
- Psychological Issues
- At-Risk/Special Needs Populations

TOOLS & GUIDELINES

- Dose Estimator for Exposure
- Template for Hospital Orders
- Use of Blood Products
- Follow-up Instructions
- Population Monitoring
- Management of the Deceased
- Develop a Radiation Response Plan
- Equip an Emergency Department for Decontamination
- Recovery after an Event
- How to Volunteer

REFERENCE/DATA CENTER

- Training and Education
- Dictionary of Radiation Terms
- Animations, Illustrations, Photos
- Emergency Contacts
- Abbreviations

FEATURES

- Nuclear Detonation Scarce Resources Working Group Publications, 3/2011 (HHS/ASPR) **NEW!**
- Response to an IND: State, Local, Tribal Playbook, 3/2011 (HHS/ASPR) **NEW!**
- Responding to an RDD / RED Emergency: the HHS Playbook, 4/2010 (HHS/ASPR)
- Responding to a Radiological or Nuclear Terrorism Incident: A Guide for Decision Makers (NCRP Report No. 165, 2011)
- Planning Guidance for Response to a Nuclear Detonation, 2nd Ed, 6/2010 (National Security Staff)

QUICK LINKS

- New Users: Where Do I Start?
- What's New on REMM
- Patient Management Algorithms & Tables
- Isotopes of Interest
- Countermeasures
- Decontamination Procedures
- Dose Estimator for Exposure
- Manage ARS Subsyndromes
- Multi-organ Dysfunction Syndrome
- Hematopoietic Subsyndrome
- Cutaneous Radiation Syndrome
- Time/Dose Effects in ARS
- Time Phases of ARS
- Strategic National Stockpile
- Animations, Illustrations, Photos
- Dictionary
- Emergency Contacts
- Download REMM (4/2010)
- Download Mobile REMM (4/2010)

OTHER WEB RESOURCES

- AFRRI
- AHEO
- TAEA
- ICRP



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



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Respond to Mass Casualty Radiation Events

Provide:

- Guidance for health care providers about clinical diagnosis and treatment during mass casualty radiological/nuclear events
- Evidence-based information that makes complex issues understandable to those *without* formal radiation medicine expertise
- Web-based information that is also downloadable in advance and available if the Internet is not accessible



How can you access REMM?

- Web – www.remm.nlm.gov
- Downloadable versions for Windows and Mac
- Mobile REMM, with selected key files from the full version of REMM
 - iPhone®/ iPod Touch/ iPad®
 - Blackberry®
 - Windows Mobile®
 - Android®
 - Palm OS® (no longer supported)
- Selected content included in WISER



Chemical Hazards Emergency Medical Management (CHEMM)

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

U.S. Department of Health & Human Services

CHEMM

CHEMICAL HAZARDS EMERGENCY MEDICAL MANAGEMENT

CHEMM Home | About CHEMM | Site Map | Contact Us

SEARCH:

First Responder | Hospital Provider | Incident Preparedness

- Quick Chemical Identification
- Acute Patient Care Guidelines
- Types of Emergencies
- Initial Event Activities
- Patient Management
- Medical Treatment Modifiers
- Tools, Guidelines, and Planning
- References/Data Center



Detecting airborne hazardous chemicals and radiation

Get the Latest CHEMM

- Download CHEMM
- Join CHEMM ListServ

Quick Links

- New Users: Where Do I Start?
- CHEMM Intelligent Syndromes Tool: CHEMM-IST
- Acute Patient Care Guidelines
- Types and Categories of Hazardous Chemicals
- Emergency Contacts
- Dictionary

About CHEMM

- Goals of this site
- Who produced this site?
- Disclaimers
- List of consultants
- Join the CHEMM ListServ
- Contact us: provide feedback
- System requirements
- More...

CHEMM for You

- First responders in the field
- Healthcare providers at the hospitals/poison centers
- Mental health professionals
- Public information officers
- Industrial hygienists/toxicologists
- Response planners
- Trainers
- The public

Other Resources

- CDC
- CHEMTREC
- DHS
- DOD
- DOE
- EPA
- FBI
- FDA
- FEMA
- HHS
- NIOSH
- NOAA
- NRC
- AAPCC

Collaborative effort between:

- U.S. Department of Health and Human Services, Office of the Assistant Secretary for Preparedness and Response (ASPR) - Office of Preparedness and Emergency Operations (OPEO)
- National Institutes of Health, National Library of Medicine - Division of Specialized Information Services (NLM\SIS)
- Many medical, emergency response, toxicology, industrial hygiene, and other experts



CHEMM – Overarching Goals

- Provide a comprehensive, user-friendly resource that will enable first responders, first receivers, other healthcare providers, and planners to plan for, respond to, recover from, and mitigate the effects of a mass-casualty incident involving chemicals.
- Be available on the Internet and also for download so that it can be used in an emergency even without an Internet connection.
- Scope – to be used for:
 - Training
 - Planning
 - Response at time of an emergency



Role-based Navigation and Key Features

The screenshot displays the CHEMM website interface. At the top, it features the U.S. Department of Health & Human Services logo and the CHEMM acronym (CHEMICAL HAZARDS EMERGENCY MEDICAL MANAGEMENT). Below this is a navigation bar with links for CHEMM Home, About CHEMM, Site Map, and Contact Us, along with a search box. Three main role-based navigation buttons are visible: First Responder, Hospital Provider, and Incident Preparedness. A large blue arrow points to the First Responder button. Below these buttons, there are several content blocks: a list of links for the First Responder role (e.g., Quick Chemical Identification, Acute Patient Care Guidelines), a central image of hazmat workers with the caption 'Detecting airborne hazardous chemicals and radiation', a 'Get the Latest CHEMM' section with download and listserve options, a 'Quick Links' section with links for new users and various tools, an 'About CHEMM' section, a 'CHEMM for You' section listing user groups, and an 'Other Resources' section with links to various agencies like CDC, FDA, and EPA. Another large blue arrow points to the 'New Users: Where Do I Start?' link in the Quick Links section.

U.S. Department of Health & Human Services
CHEMM
CHEMICAL HAZARDS EMERGENCY MEDICAL MANAGEMENT

CHEMM Home | About CHEMM | Site Map | Contact Us | SEARCH:

First Responder | Hospital Provider | Incident Preparedness

- Quick Chemical Identification
- Acute Patient Care Guidelines
- Types of Emergencies
- Initial Event Activities
- Patient Management
- Medical Treatment Modifiers
- Tools, Guidelines, and Planning
- References/Data Center

Get the Latest CHEMM

- Download CHEMM
- Join CHEMM ListServ

Quick Links

- New Users: Where Do I Start?
- CHEMM Intelligent Syndromes Tool: **CHEMM-IST**
- Acute Patient Care Guidelines
- Types and Categories of Hazardous Chemicals
- Emergency Contacts
- Dictionary

About CHEMM

- Goals of this site
- Who produced this site?
- Disclaimers
- List of consultants
- Join the CHEMM ListServ
- Contact us: provide feedback
- System requirements
- More...

CHEMM for You

- First responders in the field
- Healthcare providers at the hospitals/poison centers
- Mental health professionals
- Public information officers
- Industrial hygienists/toxicologists
- Response planners
- Trainers
- The public

Other Resources

- CDC
- FDA
- CHEMTREC
- FEMA
- DHS
- HHS
- DOD
- NIOSH
- DOE
- NOAA
- EPA
- NRC
- FBI
- AAPCC

Detecting airborne hazardous chemicals and radiation

Role-based Navigation

U.S. Department of Health & Human Services

CHEMM

CHEMICAL HAZARDS EMERGENCY MEDICAL MANAGEMENT

CHEMM Home | About CHEMM | Site Map | Contact Us

SEARCH:

You are here: [Home](#) > Information for the First Responders

Information for the First Responders

Responding

- [Preparing to Respond](#)
- [Arrival on the Scene](#)
- [Casualty Triage](#)
- [Casualty Assessment](#)
- [Casualty Treatment](#)
- [Casualty Transport](#)



Training & Planning

- [Training](#)
- [Planning](#)

Related Topics

- [Other Resources for First Responders](#)
- [Information for the Hospital Providers](#)
- [Information for Incident Preparedness](#)

Quick Links

- [CHEMM Intelligent Syndromes Tool: CHEMM-IST](#)
- [Acute Patient Care Guidelines](#)
- [Types and Categories of Hazardous Chemicals](#)
- [Emergency Contact](#)
- [Dictionary](#)

Introduction of Key Component #1: CHEMM-IST



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Today, downloadable and online

The CHEMM Intelligent Syndromes Tool

U.S. Department of Health & Human Services
CHEMM
CHEMICAL HAZARDS EMERGENCY MEDICAL MANAGEMENT

CHEMM Home | About CHEMM | Site Map | Contact Us

SEARCH:

You are here: [Home](#) > CHEMM Intelligent Syndrome Tool (CHEMM-IST)

CHEMM Intelligent Syndrome Tool (CHEMM-IST)

Question

 **Eye Irritation?**
A patient with eye irritation will exhibit tearing, pain or burning.

Progress

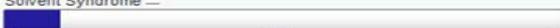


[State of Alertness?](#) Altered
[Syncope?](#) No
[Pinpoint Pupil?](#) Yes
[Seizure?](#) No
[Cardiac Signs?](#) No
[Burning Throat/Nose?](#) No
[Wheezing?](#) No
[Shortness of Breath?](#) No
[Wet lungs/Rales?](#) No
[Sweaty?](#) No
[Burning Chest Pain?](#) No
[Irritated or Burning Skin?](#) No

Syndrome Prediction

[Knockdown Syndrome](#) —
 1.0

[Pesticide Syndrome](#) —
 9.0

[Solvent Syndrome](#) —
 1.0

[Irritant Gas Syndrome](#) —
 1.0

Uncertain More Probable Most Probable

Assumptions

- The scene is suspicious for a chemical exposure.
- This is an inhalation exposure that does not result in condensation on the skin.
- The focus is on the severe cases.
- The tool is for ELS provider to use in a mass casualty incident.
- It can also be used by ALS first responders and hospital first receivers.

Introduction of Key Component #2: Medical Management Content



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- Detailed step-by-step medical management guidelines for first responders at the scene and providers in the hospital including the emergency department and intensive care
- Guidelines for children, pregnant women, and elderly patients
- Extensive input from other physicians



Example of Medical Management Content: Prehospital Management

- Agent Management Overview
- Hot Zone
- Decontamination Zone
- Support Zone

The screenshot displays the CHEMM website interface. At the top, the navigation bar includes 'CHEMM' and 'CHEMICAL HAZARDS EMERGENCY MEDICAL MANAGEMENT'. Below this, a breadcrumb trail reads 'You are here: Home > Blood/Systemic Agents > Hydrogen Cyanide > Prehospital Management'. The main heading is 'Hydrogen Cyanide - Prehospital Management'. A sidebar on the left lists navigation options: 'Acute Management Overview' (selected), 'Hot Zone', 'Decontamination Zone', and 'Support Zone'. The main content area is titled 'Acute Management Overview' and contains two sections: 'Agent Identification' and 'Rescuer Protection'. The 'Agent Identification' section includes a blue flask icon and a list of bullet points describing the agent's characteristics, toxicity, and identification tools. The 'Rescuer Protection' section includes a pair of yellow boots icon and a list of bullet points regarding secondary contamination and PPE requirements.

Agent Identification

- Hydrogen cyanide has a distinctive bitter almond odor, but some individuals cannot detect it and consequently, it may not provide adequate warning of hazardous concentrations. The odor of hydrogen cyanide is detectable at 2-10 ppm (OSHA PEL = 10 ppm), but **does not provide adequate warning of hazardous concentrations**. Perception of the odor is a genetic trait (20 % to 40 % of the general population cannot detect hydrogen cyanide).
- Hydrogen cyanide is highly toxic by all routes of exposure. The amount of cyanide, the duration of exposure, and the route of exposure all influence the time to onset and the severity of illness.
- With higher doses the time of onset of symptoms typically is seconds following inhalation of gaseous hydrogen cyanide and may cause abrupt onset of profound CNS, cardiovascular, and respiratory effects, leading to death within minutes. Signs and symptoms may present over a much longer period of time if the poisoning is gradual with lower doses.
- Liquid agent, which is readily absorbed through skin (**especially in young children and pregnant women**), can produce symptoms immediately or be delayed up to an hour.
- Identification Tools** - CHEMM-IST, WISER, Cyanide Chemical Properties, M256A1 chemical agent detector kit (liquid and vapor), M18A2, M90 chemical agent detectors (vapor), M272 chemical water testing kit, FEMA Chemical ID Apparatus
- Persons whose clothing or skin is contaminated with cyanide-containing solutions can secondarily contaminate response personnel by direct contact or through off-gassing vapor.

Rescuer Protection

- Persons whose clothing or skin is contaminated with cyanide-containing solutions can secondarily contaminate response personnel by direct contact or through off-gassing vapor.
- PPE Required - Level A**
- Link to PPE, Rescuer Safety Prehospital Management section

and more

In Progress

Adding additional key chemicals

Add medical countermeasures

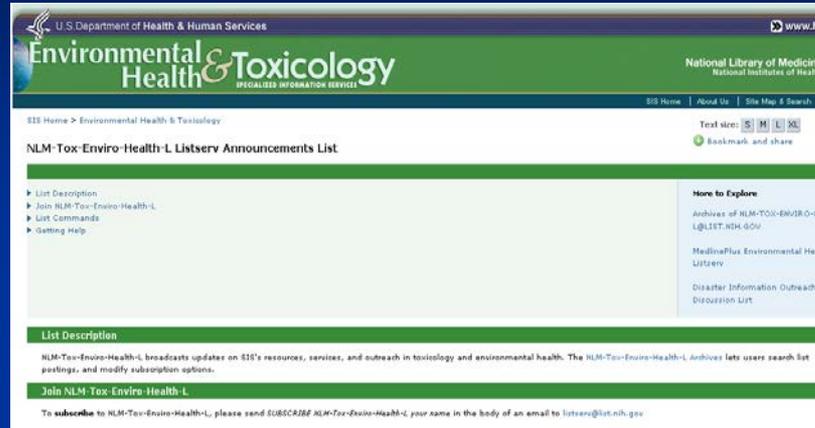
Information capture module

and

Combining CHEMM and WISER, e.g., as an app



How to stay informed



National Library of Medicine

Hazmat and CBRN Tools and Apps

Disaster Information Management Research Center
disasterinfo.nlm.nih.gov

WISER
 Wireless Information System for Emergency Responders
wiser.nlm.nih.gov

REMM
 Radiation Emergency Medical Management
remm.nlm.gov

CHEMM
 Chemical Hazards Emergency Medical Management
chemm.nlm.nih.gov



twitter

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NLM_SIS

Tox Town releases a Bisp (BPA) page. <http://bit.ly/af>
 4:54 AM Mar 24th via TweetDeck

Environmental Health & Toxicology page has <http://bit.ly/cFVnn1>
 6:01 AM Mar 23rd via TweetDeck

RT @PoisonPrevent: President Obama Declares National Poison Prevention Week <http://bit.ly/af>
 2:45 AM Mar 20th via TweetDeck

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nlm in focus

NEWS FROM THE WORLD'S LARGEST MEDICAL LIBRARY

December 9, 2010

NLM Disaster-Response Tools: Helping Emergency Responders

September 30, 2010

With over 30 years as an emergency responder, Richard Brooks has seen more than his share of people in danger—from fires, suffocating plumes of smoke and ash, spreading puddles of unknown noxious liquids and more. No matter how low or high-tech the approach to such emergencies, he says the challenge first responders always face is how to react quickly and correctly.

"Speed can lead to error, but delay can court catastrophe. Guessing, even a good guess, can turn tragically wrong and increase casualties and spread the problem," says Brooks, who is director of the Department of Emergency Services in Cecil County, Maryland. "That is why I am a big fan of WISER®."



- **Comments?**
- **Suggestions?**

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