Interstate Chemical Terrorism Workgroup

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Statement of Purpose

- "Many of us working in state and local agencies have been urged to develop information on the role of public health in the event of chemical terrorism, and once the role is defined, to develop relevant materials. In an effort define our role and to share knowledge, materials and resources, representatives from state, local and federal agencies have formed this working group.
- We welcome participation from state, local, and federal health and health-related agencies and institutions [within the U.S.]"

ICTW Description

- Development
 - Concept formed at WREN 5 years ago
 - First conference call August, 2002
 - 49 states + federal agencies currently participate
 - Over 300 members
 - Advisory council
- Information Sharing
 - Monthly conference calls with speaker
 - Epi-X Forum web site (CDC, secure)
 - Email exchange

ICTW Projects

- Workshop with CDC "Risk Communication Needs in a Chemical Event," Atlanta, GA,2004
 - Journal article (same title) J. Em. Mgmt 4(2): 37-46, 2006
 - Includes core competencies for agencies
- Hazard & Vulnerability Analysis
 - Resources for conducting analyses by state health agencies
- Fact sheet templates
 - First responder, Physician, Public, Press
- InfoMatrix emergency response resource list
 - Updated annually

Nuggets Mined from Speaker Topics

Resources and Brainstorming for Emergency Preparedness

Chemical Threat Talks

- "Chemical Terrorism, Threats and Strategies" Gary Ackerman, Monterey Institute of Int'l Studies, 2003
- "Ricin" Mark A. Poli, US Army Medical Research Institute of Infectious Diseases (USAMRIID), 2004
- "Ricin Roundtable" Ellen Andersen, Navy Environment Protection Medical; Dan Drociuk, SC Dept. of Health and Environ. Control; Max Kiefer, NIOSH; Rick Niemeier, NIOSH, and Bob Wannemacher, USAMRIID, 2004
- "Clandestine Labs" Henry Nehls-Lowe, WI Dept. of Health and Family Services and Michael Pixton, California EPA, 2004

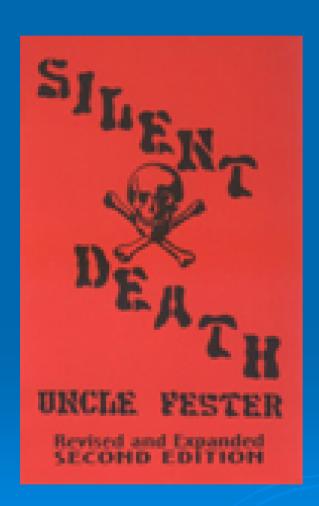
Sarin – Tokyo Subway, 1995

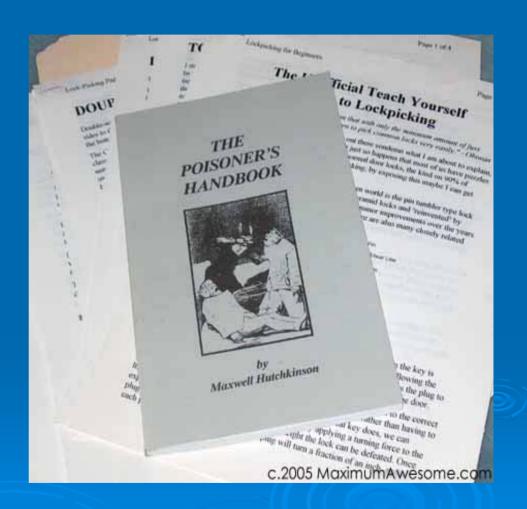


Chemical Terrorism

- Chemical terrorism has increased since the mid-70s
- Actual use is much higher than biological agents
 - Incidents 164 chemical, 39 biological
 - Fatalities 953 chemical, 8 biological (incl. anthrax cases)
 - Monterey Institute (MIIS) database <u>www.cns.miis.edu</u>
- "Hydrogen cyanide (HCN), Ricin, and TICS [toxic industrial chemicals] agents of choice [so far] for Islamist terrorists."
 - "Al-Qa`ida and the Chemical Threat," René Pita, 2005

Do-it-yourself Guides





Castor Bean Plant (Ricin)





South Carolina Ricin Letter

- > Threatening letter containing ricin received at postal facility, 2003
 - MMWR: http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5246a5.htm
- Public health tasks:
 - Briefing and interview with facility postal workers
 - Close facility and conduct environmental testing
 - Send health alert messages to health care providers and poison centers
 - Provide press information
- Learning experiences:
 - Ricin in a sealed container no exposures BUT 5 day delay in lab results – positive for ricin
 - Delay might have caused occup. illnesses had ricin been released
 - Info-sharing between public health and FBI was very important
 - Recommend fostering FBI relationships before an event

Food and Water Talks

- "Short Incubation Foodborne Outbreaks" Helen Schurz Rogers, CDC, 2007
- "Protecting America's Food and Agricultural Infrastructure" John Hoffman, Department of Homeland Security, 2005
- "Water Security in a CBRNE Incident," Steve Allgeier, US EPA, 2004
- "Food Safety Chemical Terrorism" Erica Liebelt, Univ of Alabama Hospitals, 2003

Federal Food/Ag Security Efforts

- Expanded screening of imports
- Development of a National Veterinary Stockpile (NVS)
- National animal ID system across animal agriculture
- Tools for conducting industry vulnerability assessments. (Milk industry already has)
- Improving response surge capacity including labs
- Nationwide training for 1st responders in food/ag terrorism

Resources for Identifying Chemical Foodborne Events

- CDC Webcasts:
 http://www.bt.cdc.gov/chemical/training.asp
 - Recognition of Chemical Associated GI Foodborne Illness
 - Recognition of Illness Associated with Chemical Exposure
 - Recognition, Management and Surveillance of Ricin-Associated Illness

Water System Vulnerabilities

- Distribution network most critical vulnerability
 - e.g. back pumping through a fire hydrant, tap, or finished water storage tanks
- Source water (surface, groundwater) less critical vulnerability – large dilution factors
- Vulnerability assessments required for systems serving 3300+ people
 - Resource: EPA Response Protocol Toolbox <u>http://www.epa.gov/safewater/watersecurity/pubs/rptb_response</u>
 <u>guidelines.pdf</u>

Chemicals

- Moderately potent contaminants.
- Many are readily available in quantity.
- Most are stable in treated water.

Chemical Class	Examples
Pesticides	Aldicarb, Dicrotophos
Inorganics	Cyanide, Arsenic
Rodenticides	Superwarfarins
Herbicides	Paraquat
Pharmaceuticals	Cardiac glycosides
CW Agents	Soman, VX



Chemical Industry, Hazmat Transportation Talks

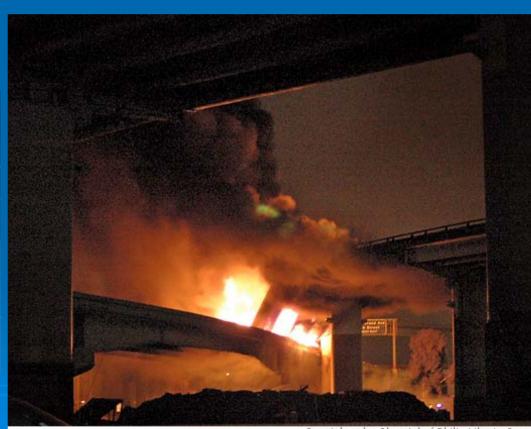
- "Chemical Sector Infrastructure and Public Health Preparedness" Paul Baldauf, NJ Dept of Environmental Protection and Erik Janus, MI Dept of Community Health, 2006
- "South Carolina Train Derailment and Chlorine Release" Thom Berry, SC Dept. of Health and Environmental Control, 2005
- "Transportation of Hazardous Cargoes through Populated Areas" Fred Millar, Washington, DC LEPC, 2004

Efforts to reduce risk in the chemical sector

- Industry efforts: Some (e.g., American Chemistry Council) require members to follow a security code
- State and Federal Efforts most successful in New Jersey
 - NJ "Chemical Best Practices Standards," 2005
 - Dept of Homeland Security Rules, 2007
- IST Inherently safer technology
 - e.g. water treatment plants switching from chlorine gas to liquid bleach
- Resource for Hazard Evaluation: EPA RMP data
 - http://yosemite.epa.gov/oswer/ceppoweb.nsf/content/RMPoverview.htm
 - Agencies can request from EPA Risk Mgmt Program Reporting Center (703) 816-4434

HazMat Transportation





Special to the Chronicle / Philip Liborio Gangi

Hazmat Transportation

- High risk scenarios heavily populated areas
 - Ports, chemical plants, railyards
- Risk reduction Focus on public right-to-know
- Rerouting of most dangerous cargo
 - Being explored by several major cities
- > Resources:
 - "1% Waybill Sample" Statistical annual sample of railroad hazmat shipments
 - Available by (agency) request: 1-202-565-1541
 - (Mac Frampton, Surface Transportation Board)
 - Ask railroads directly for their complete data

S. Carolina Chlorine Release



Chlorine Release Issues:

- Lack of training for volunteer fire fighters in chemical awareness
- Language barrier Spanish translator needed
- Chlorine corroded wiring in fire station, some homes
 - Note: chlorine can destroy hard wired systems!

Three Preparedness Recommendations:

- Get prepared fact sheets ready to post to web site, or link to a trusted site
- Training for 1st responders and public health in chemical emergency response
- Public health staff (PIOs) need to be well-trained in ICS

Technical Assistance Talks

- "FBI Scientific Workgroup on the Forensic Analysis of Chemical Terrorism" Rick Niemeier, NIOSH, 2005 & 2007
- "NOAA Precursor Database" Jim Farr and Polly Jenne, National Oceanic Atmospheric Administration, 2006
- "NOAA HazMat, CAMEO, and the Chemical Reactivity Worksheet" Jim Farr, National Oceanic Atmospheric Administration, 2004
- > The National Response Team (NRT) and Regional Response Teams (RRTs), Mike Ardito, US EPA Region 9, 2003

Technical Resources

> CAMEO

- Chemical library, air dispersion model, & electronic mapping function
- Chemical ID and response information for ~6,000 chemicals
- (http://www.epa.gov/ceppo/cameo/index.htm)

Chemical Reactivity Worksheet

- Analyzes potential reactions between pairs of chemicals
- Over 6,000 chemicals http://response.restoration.noaa.gov/chemaids/react.html

NOAA Precursor Database

- Info on chemicals needed to prepare explosives, narcotics, and other chemical agents
- ~1,000 'agents', including explosives, narcotics, chemical warfare agents, and toxic industrial chemicals
- Database can be searched for either an agent or a precursor
- For more information: contact Jim Farr at <u>Jim.Farr@NOAA.gov</u>

Occupational Safety & Health Talks

- "NIOSH National Personal Protective Technology Laboratory" Heinz W. Ahlers, NIOSH Technology Evaluation Branch, 2007
- "Essential Elements of Respiratory Protection" Glenn Paulson, New Jersey Center for Public Health Preparedness, 2006
- "Briefing on Hazmat Training Issues" Joseph (Chip) Hughes, NIEHS Worker Education and Training Program & Bruce Lippy, National Clearinghouse for Worker Safety and Health Training, 2003

Tokyo Subway Sarin Release



Guide to all-hazards respiratory protection

- "Essential Elements of Respiratory Protection Guide"
- > Topics include respirator selection
- Regularly updated
- > Online, Free
- New Jersey Center for Public Health Preparedness
 - http://www.njcphp.org/ppe/index.cfm

First Responder Training

- "Developing Cross-Training for Emergency Responders and LRN Laboratories" Kathryn Hansen, CA Dept. of Health Services, 2007
- "Bioterrorism in an All Hazards Response" Kathryn Hansen, CA Dept of Health Services, 2005 & 2006
- "Dugway Proving Ground Advanced Chemical/Biological Integrated Response Course" David Jensen, CA Dept of Health Services, 2004

Public Health & 1st Responders

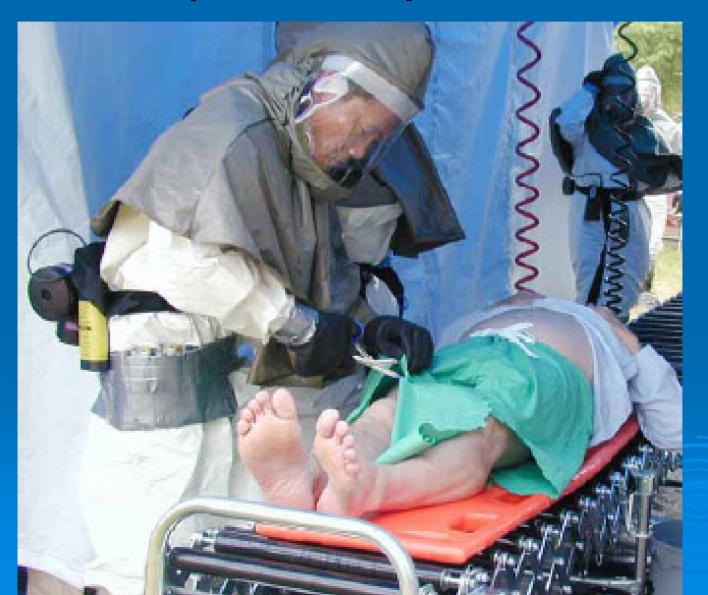
Key Points:

- Hazmat teams tend to see the obvious hazmat not a covert event.
- Covert events usually ID'd by clinicians / public health agencies.
- Public health resources precisely what are needed to address covert and unconventional incidents with a dispersed impact
 - e.g., product tampering, food/drinking water contamination, infectious agents.
- Cross-training for first responders includes awareness of public health resources
 - e.g., public health officers, epidemiologists, health educators, laboratories.

Training Resources

- National Clearinghouse for Worker Safety and Health Training http://www.wetp.org
- Centers for Public Health Preparedness
 - On-line emergency response training resources (http://www.asph.org/acphp/phprc.cfm)
- Office of Domestic Preparedness first response to WMD terrorism incidents.
 - http://www.ojp.usdoj.gov/odp/docs/coursecatalog.pdf

Hospital Preparedness



Hospital Preparedness Talks

- "Sioux Valley Health System Drills" Greg Santa Maria, Sioux Valley Hospital, South Dakota, 2006 & 2007
- "Hospital Preparedness for Chemical Terrorism," Bill Fales, Michigan State University Kalamazoo Center for Medical Studies and Susan Kess, CDC, 2004
- "OSHA Personal Protective Equipment Guidance for Hospital First Receivers" David Ippolito, OSHA, 2003 & 2004

Hospital Needs

- Clinical workforce trained in syndromic recognition of likely weaponized agents
- Syndromic (all hazards) protocol dealing with unknowns in early critical hours before identification is made
- Ongoing communication with the incident scene, e.g.
 - Early information on chemical to prepare for decontamination
 - Field and lab test results
 - Clinical signs and symptoms

Hospital Needs, continued

- Hazard vulnerability assessment (HVA) in high-risk communities
- Agreed-upon PPE ensemble for a hospital (HVA assists in choice) and PPE training
- Agreed-upon mass casualty decon. equip. (HVA assists)
- Protocol for hospital security
 - Most people self-transport to hospital in emergency
 - Community education on protecting hospitals from being contaminated

Resource: OSHA Best Practices for Hospital-Based First Receivers

- Real-world protective equip. and work practices to address unknowns, including WMD chemicals
- For hospital employees that engage in decon. of patients coming from the incident
- Patient self-referrals are anticipated
- Includes security measures
- http://www.osha.gov/dts/osta/bestpractices/firstreceivers hospital.html

Poison Control Centers & Syndromic Surveillance Talks

- "Poison Control Centers' Role in Preparedness and Response" Rebecca Garcia, North Texas Poison Center and Jay Schauben, Florida Poison Information Center, 2006
- "FirstWatch Early Warning System" Todd Stout and Kurt Mills, First Watch, 2006
- "Clinical Syndromic Surveillance for Chemical Events" Jay Fiedler and Kim Kutzko, Michigan Dept. of Community Health, Melisa Lai, American Association of Poison Control Centers, and Lori Hutwagner, CDC, 2005
- "Toxic Exposure Surveillance System, TESS" Martin Belson, CDC, 2003

PCC Services

- A single national number anywhere in the county, 24/7, to your local Poison Control Center: 1-800-222-1222
- > 24/7 assessment, triage, and medical advice
- Rapid communication with hospitals and clinics
- Syndrome surveillance
- Rapid statements to press, fact sheets
- Health educators (community and on-line)

PCCs – Long-Range Planning

Issues:

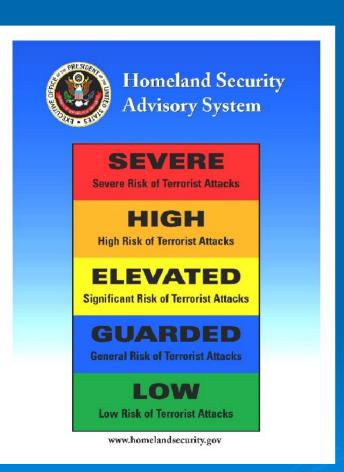
- Poison Centers not integrated with response community
 - 1st responders largely unaware of PCCs' capabilities
- PCCs need to participate at regional level to integrate with 1st responders,
 - but are managed by individual states

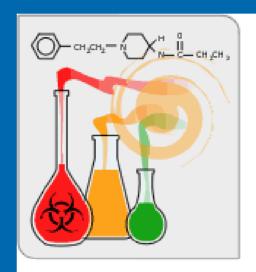
Vision:

- Create a Regional PCC organization
 - supported by the American College of Medical Toxicology.
- Integrate PCCs in emergency response drills
- Written protocols outlining role of PCCs in emergency response

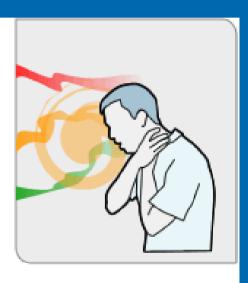
Recommendation: PCCs, first response agencies, and public health agencies should work together on plans and exercises

Risk Communication





1. A chemical attack is the deliberate release of a toxic gas, liquid or solid that can poison people and the environment.



2. Watch for signs such as many people suffering from watery eyes, twitching, choking, having trouble breathing or losing coordination.

Risk Communication Talks

"Crisis and Emergency Risk Communication Tool Kit" Terri Stratton, CA. Dept of Health Services, 2005

"Chemical Terrorism-Public Response" Neil and Carson Henderson, University of Oklahoma College of Public Health, 2004

Focus Group Findings – Chemical Terrorism

- Accurate public knowledge essentially zero
- Unable to differentiate between infectious and noninfectious agents
- No public knowledge about notion of decontamination
- Protecting / decontaminating pets important
- > Information Materials:
 - Wide placement groceries, schools, libraries, doctor's offices
 - Decreased reading level
 - Print messages need to include graphics
 - Non-English speaking/ESL language translation

Crisis & Emergency Risk Communication Toolkit

- Assists local health depts. in public communication in a crisis
- For people without a lot of experience in crisis risk communication
- Reviewed and approved by CDC
- Includes Terrorism key messages
 - Anthrax, Dirty bomb, ricin, sarin, smallpox
- Available: Terri Stratton tstratto@dhs.ca.gov

Radiation Talks

- "First Responders Guide to a Dirty Bomb" Frieda Fisher-Tyler, Conference of Radiation Control Program Directors, 2006
- "Assessment of Post-Exposure Radiation Dose" Joseph Albanese, Yale New Haven Health Center for Emergency Preparedness, 2006
- "Responding to a Radiation Incident" Harold Swartz, Dartmouth, 2006
- "Dirty Bombs" Victor Anderson, CA Dept Health Services, Dan Corti, U. Montana, and Steve Woods, CA DHS, 2003

RDD First Responder Resource

- RDD First Responders' Card
 - From: Conference of Radiation Control Program Directors (CRCPD)
 - Pocket-size, waterproof, alcohol-proof, tear resistant; cost - \$1
 - http://www.crcpd.org/RDDGuide.htm

- > RDD Companion Handbook
 - Expands on each of the pocket card actions
 - http://www.crcpd.org

Lab and Field Analysis Talks

- "Laboratory Information Management Systems (LIMS)" Mike Davisson and Chuck Hughes, Washington State Public Health Laboratories, 2005
- "Roundtable Discussion Laboratory Issues" 2005:
- "Triage Protocol for Unknowns" Rob Rothman and Oba Vincent, US EPA
- "APHL Chemical Preparedness Survey" Lauren DiSano, Assoc. of Public Health Labs
- "Environmental Sampling" George Eadon and Ken Aldous, New York Dept of Health
- "CDC Tech Transfer of CWA Methods to State Labs" Bob Kobelski, CDC, 2003
- "Measuring Terrorism-Related Contamination: Selected Scenarios"
- > Bart Simmons, California EPA, 2003
- "False Negatives and False Positives with Field Detection Techniques" Ben Garrett, FBI Laboratory Division, 2003

Thank You!



Round Table Public Health Emergency Preparedness for Chemical Emergency Incidents

Michael Heumann
Oregon Public Health Division
May 17, 2007

Goal of the Round Table Discussion

- Provide and overview of some key issues
- Describe some challenges or problems
- Identify some opportunities
- Generate discussion

Challenges/Problems

Post 9/11 era – Homeland Security focus on Terrorism and Bio-terrorism

Atmosphere of fear, distrust & secrecy

- Prior work of Environmental Public Health has been either ignored or unrecognized
 - Epidemiology & Toxicology
 - Radiation Protection
 - Food Safety
 - Water Security
- Different language used
 - Prior was subject matter-specific
 - Now: ICS & NIMS
- Emphasis on creating new systems & not building on what exists

Opportunities

- Focus on:
 - Planning
 - Training (general and role-specific)
 - Exercises
- Bringing together players & partners from different disciplines and jurisdictions
- Emphasis on:
 - Roles
 - Responsibilities
 - Lines of Communication
- ICS/NIMS
 - Useful common approach across disciplines

Group Discussion

■ What are your experiences, ideas, worries, successes, hopes?