2025 Community Based Emergency Response Seminar

Chemical Emergency Response Tabletop Exercise

CBERS Planning Partnership

DEQ
VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

VDH VIRGINIA DEPARTMENT OF HEALTH

VIRGINIA DEPARTMENT OF EMERGENCY MANAGEMENT

DCLS

DGS

Agenda

Time	Topic
8:30 am	Registration
9:00 am	Welcome, Introductions, Objectives and Ground Rules
9:15am	Special Topic & Capability Briefs:
	20 Min-Office of Drinking Water
	20 Min-Department of Environmental Quality
	20 Min-Environmental Health
	20 Min-Division of Consolidated Laboratory Services
	20 Min-Chempack
10:45am	BREAK
11:00 am	Exercise Module I-Small Group Discussion
11:45 am	Exercise Module I-Large Group Discussion
12:00 pm	Working Lunch
12:30 pm	Exercise Module II-Small Group Discussion
1:30 pm	Exercise Module II-Large Group Discussion
2:00 pm	BREAK
2:30 pm	Hotwash
3:00 pm	Closing Comments
3:30 pm	Adjourn

2025 CBERS Overview

The purpose of the 2025 Community Based Emergency Response Seminar (CBERS) is to bring together Public Health, Emergency Management, Laboratories, Environmental programs, Healthcare Coalitions, State Emergency Response Commission, Local Emergency Planning Committees (LEPC's), Public Safety and other partners responsible for coordinating response and recovery efforts to a Chemical Mass Casualty Incident.

Objectives and Aligned Capabilities

- Discuss risks, hazards and threats and the capabilities to assess the health needs of the population in response to a Chemical Mass Casualty Incident.
- Discuss strategies to distribute, dispense or administer Medical Countermeasures to the public in response to a Chemical Mass Casualty Incident.
- Examine and discuss agency roles in response to a Chemical Mass Casualty Event.
- Assess multi-agency coordination in response to a Chemical Mass Casualty Event in accordance with existing plans, policies and procedures.
- Discuss initial actions for the recovery phase of the locality in response to a Chemical Mass Casualty event.

- **Public Health Emergency Preparedness Capabilities:** *Community Preparedness, Community Recovery, Emergency, Operations Coordination, Information Sharing, Medical Countermeasures Administration and Dispensing, Medical Surge, Public Health Laboratory Testing , Responder Safety and Health*
- **Healthcare Preparedness Capabilities:** *Healthcare and Medical Response Coordination, Medical Surge*
- **Department of Homeland Security Core Capabilities:** *Planning, Operational Coordination, Emergency Public Information and Warning, Environmental Response Health and Safety, Public Health, Healthcare and Emergency Medical Services, Health and Social Services*

Special Topic & Capability Briefs

VDH Office of Drinking Water

20 Minutes

Welcome to the Office of Drinking Water!

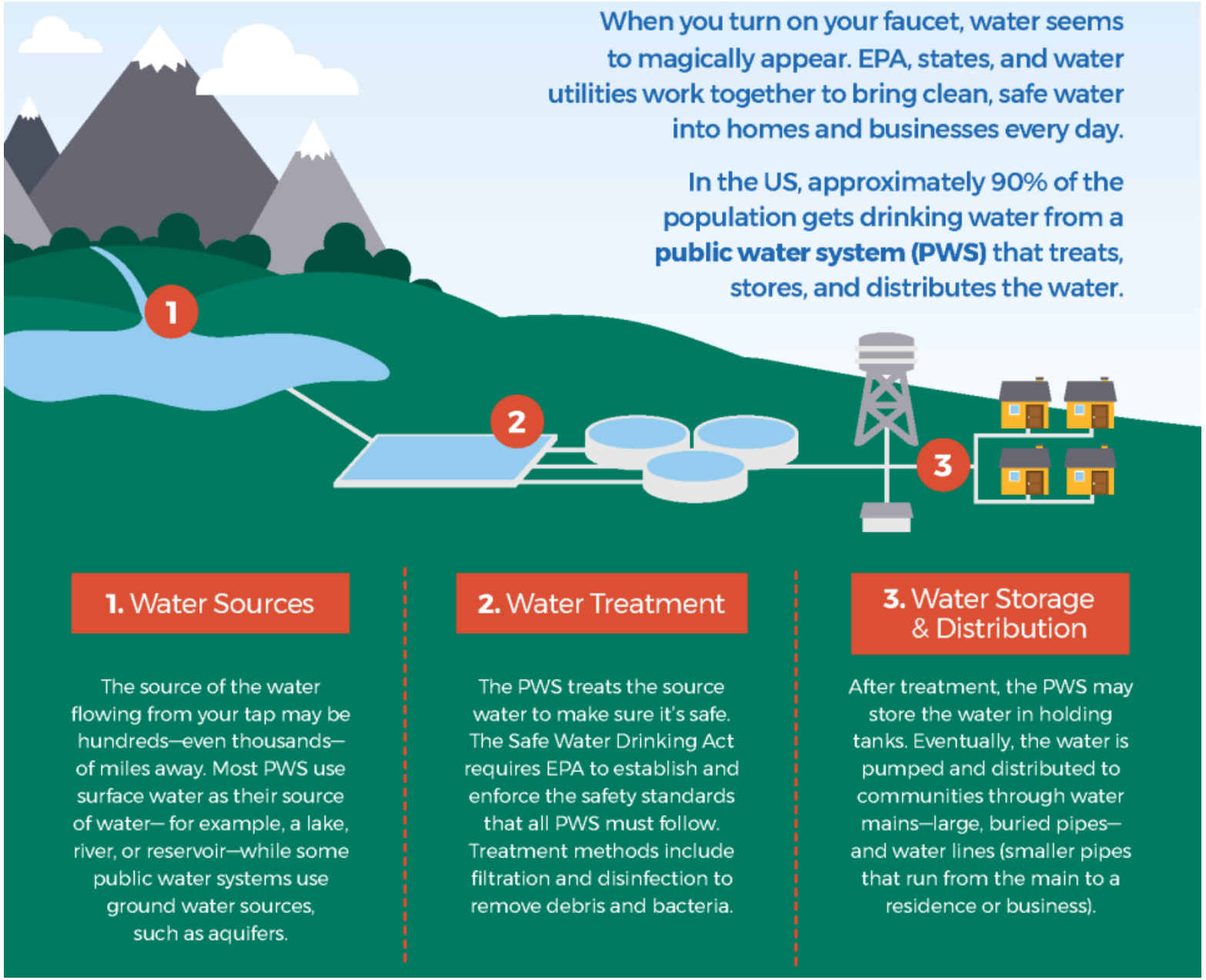
Jessica Coughlin, CEI

What is Drinking Water?

Water for human consumption which includes drinking, handwashing, bathing, showering, cooking, dishwashing, and maintaining oral hygiene.


KENTUCKY-FRIED

How Clean Water Gets to Your Faucet



Legal FAQs

THE SAFE DRINKING WATER ACT (SDWA)

- Passed by Congress in 1974 to protect public health by regulating the nation's public drinking water supply.

-The law was amended in 1986 and 1996 and requires many actions to protect drinking water and its sources—rivers, lakes, reservoirs, springs, and ground water wells.

SDWA recognizes that since everyone drinks water, everyone has the right to know what's in it and where it comes from.

All water suppliers must notify consumers quickly when there is a serious problem with water quality.

National drinking water standards are legally enforceable

- Both US EPA and states can take enforcement actions against water systems not meeting safety standards.

ODW FAQs

What is a public waterworks?

- Provides piped water for human consumption to at least 15 connections OR regularly serves an average of 25 persons per day for at least 60 days of the year (restaurant, motels, parks, breweries, wineries, wedding venues, campgrounds, and marinas)

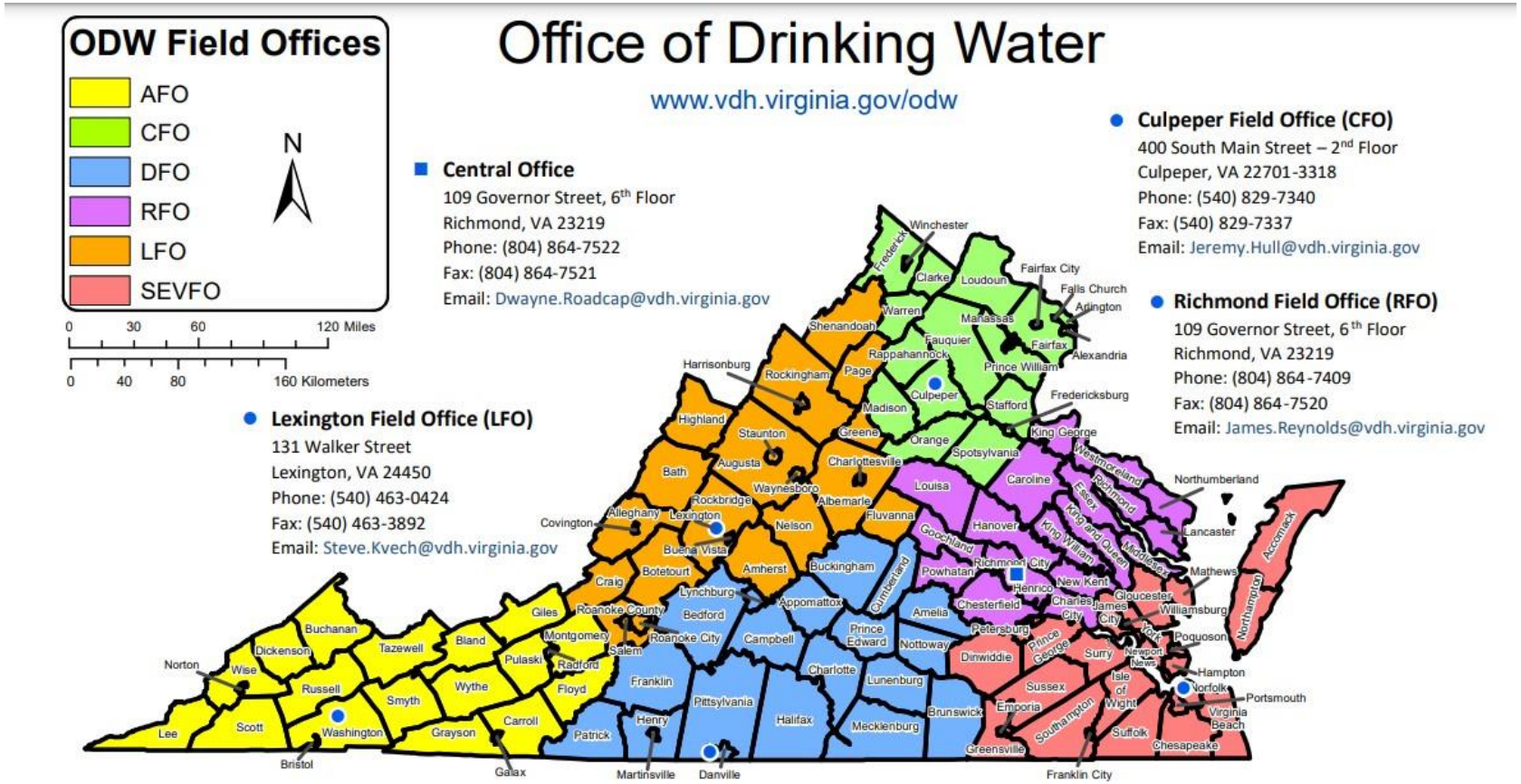
ODW regulates 2,825 waterworks in Virginia.

- 20 of the largest waterworks serve over 55% on the population
- Only ~1% of the population in Virginia is not served by a public waterworks in some capacity

ODW is the regulatory office that oversees all public waterworks systems in Virginia. We then report to the EPA.

- We perform sanitary surveys
- We issue construction and operations permits
- We enforce chemical and bacteriological water quality
- We provide technical assistance
- We provide financial and construction financial assistance to waterworks
- We coordinate with other state agencies and provide Emergency Management technical assistance

Regional Field Office Map



What We Do Not Do

We do not provide emergency drinking water resources

We do not do anything related to sewage (DEQ), unless it is affecting a water source used for drinking water

We do not regulate private connections into homes or businesses

We do not regulate private wells or septic systems (OEHS)

- We do regulate waterworks that use community wells to provide water

We do not issue advisories for recreational water uses (OEHS)

- Shellfish
- Swimming

So, What is a Water Emergency???

1. Situations in which there is not flowing water that affects critical infrastructure (correctional centers, long term care facilities, hospitals), large populations, extended situations (longer than 4-5 days)
2. Any residential location under a Do Not Drink (DND), Do Not Use (DNU), or without drinking water or expected to be without drinking water for more than 12 hours that affects greater than 3,000 customers
3. When a Do Not Use is issued – Possible containments in the water
4. Any hazmat that will impact a drinking water intake in less than 4 hours and is not properly controlled or results in a DNU/DND
5. Some large-scale Boil Water Advisories (BWA) (5,000+ customers)
6. Large scale, catastrophic disasters (Hurricanes, earthquakes, tornado, cyber attack, etc.)

A “Few” Water Emergencies Recently in VA

Town of Appalachia – Drought

Page County – BWA lasting many months due to negligent owner. In legal enforcement currently.

Charles City County – long-term petroleum leak into the drinking water wells. Serves hot food.

City of Winchester – Anatoxin-A Harmful Algal Bloom

South Hill – Warehouse fire with contaminants entering two watersheds

Arlington County – Aqueduct Algal Bloom/increased turbidity

Orange County – Unknown odor – Do Not Use advisory

SW Virginia – Hurricane Helene

Richmond City (Central Virginia Region) – Large scale no water, BWA

SW Virginia – Winter storm/Flooding

One Lesson Learned in Each Emergency Is Consistent…

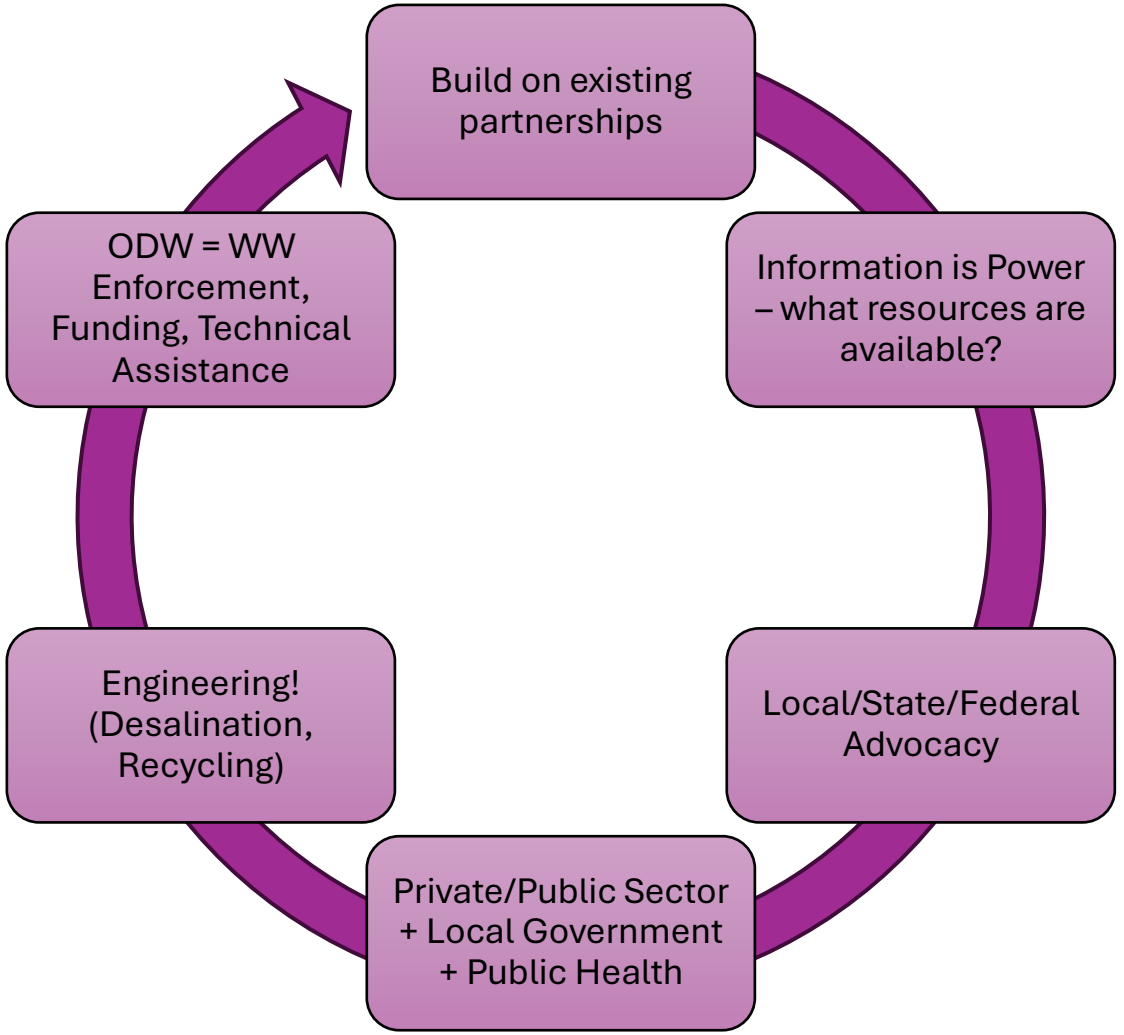
PREPARE NOW!

- **Waterworks**
- **Locality Emergency Management**
  - State Emergency Management (VDEM)
- **Public Health**
  - Office of Drinking Water (VDH ODW)
  - Local Health District
  - Environmental Health (VDH OEHS)
- **Healthcare**
- **Communications**
- **Local Government (Elected Officials)**
- **State Government (Elected Officials)**
- **Federal Government (EPA)**
- **Environmental Quality (DEQ)**

BUT Water also has Long-Term Public Health Consequences

- LACK of reliable Drinking Water
- Arsenic Compliance
- Disinfection Byproducts
- Lead and Copper
- Total Coliform
- PFAS (Forever Chemicals)
- Nitrates
- Volatile Organic Chemicals (VOCs)

Not So Quick Fixes to Not So Small Problems




Modelo
ARENA
T-Mobile
UFC
30
YEARS
UFC STRIKE
Who's got the
first question?
Modelo

Office of Pollution Response & Emergency Preparedness

Program Overview

Elizabeth “Beth” Lohman, Manager
Office of Pollution Response & Emergency Preparedness
Virginia Department of Environmental Quality

PREP PROGRAM OVERVIEW

Pollution Response

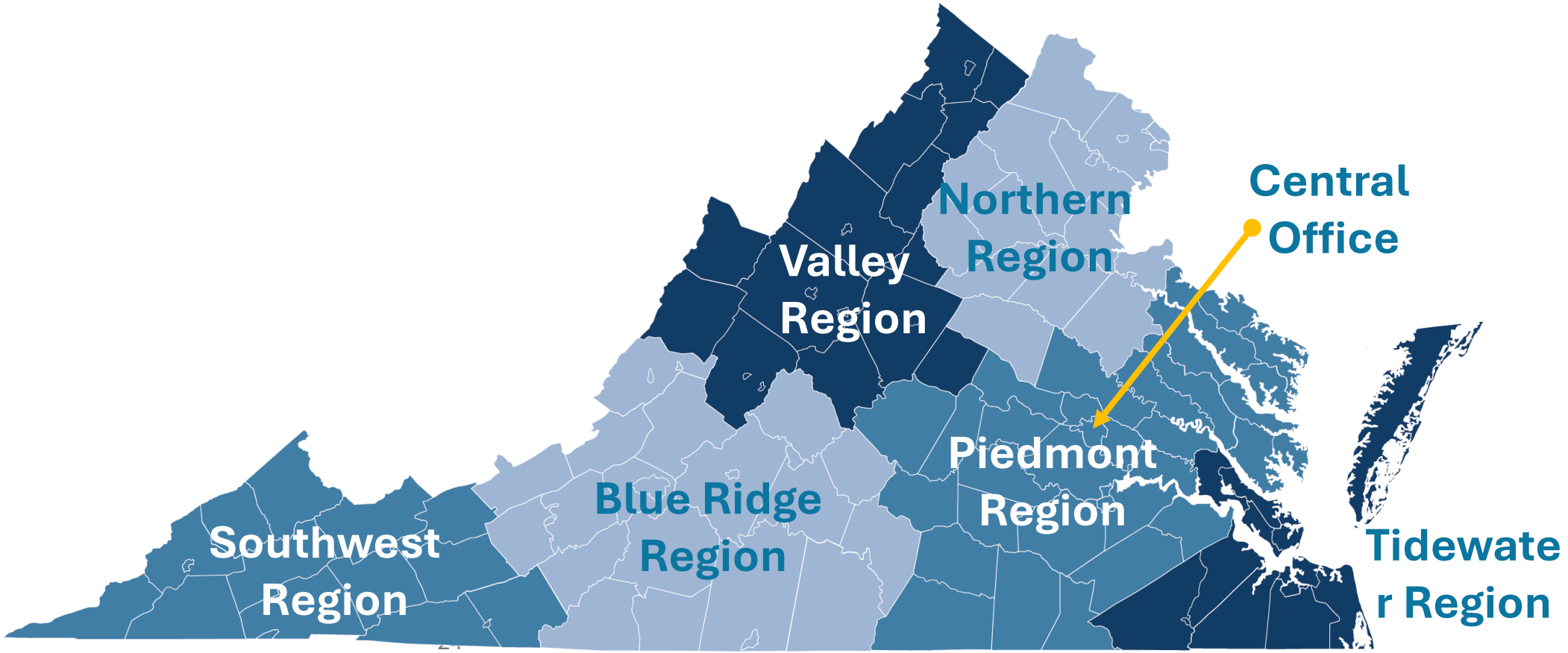
The program receives on average 5,000 multimedia pollution reports annually from the public, permittees, responsible parties, and response partners. Reports include the release of oil, hazardous materials, sewage, and other materials from fixed facilities, transportation facilities, and other sources.

Emergency Preparedness

During disasters and large-scale pollution incidents, the program coordinates with federal, state and local response partners to plan for and respond to medium and large-scaled events. PREP serves on federal, state, and local planning committees and serves as the liaison to the Virginia Emergency Support Team (VEST).

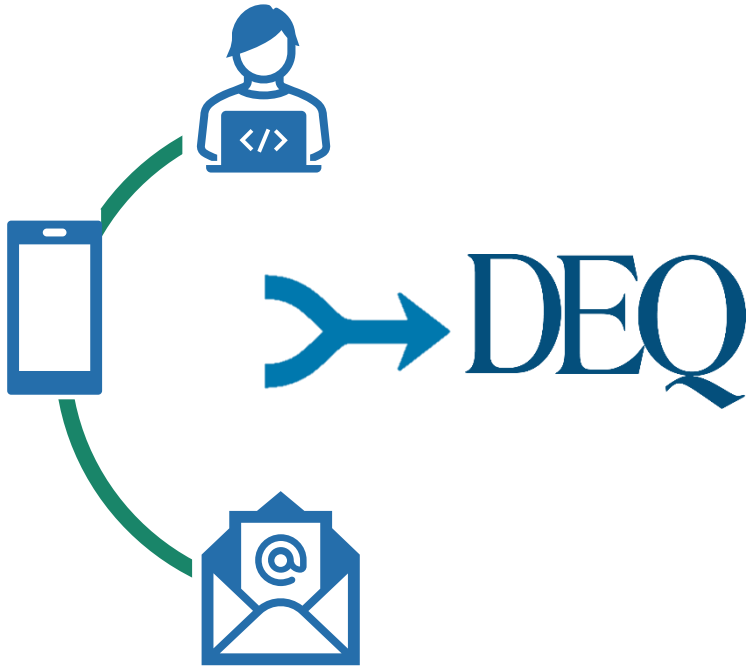
PREP PROGRAM OVERVIEW

Central Office: Program Manager, 2 Planners, GIS/Data Coordinator
6 Regional Offices: 12 Pollution Response Coordinators
+800 staff to provide scientific, technical and administrative support



INITIAL NOTIFICATIONS

The public, permittees, or other agencies may submit a pollution report to DEQ.



OR

If a pollution report is submitted to VDEM, a SWAN notification is sent.

Virginia Emergency Operations Center

800-468-8892

SWAN

REGIONAL HAZMAT OFFICER

PREP COORDINATOR

OFFICE OF DRINKING WATER

*When surface water is threatened or impacted

STATE ON-SCENE COORDINATOR (SOSC) ROLE

SOSC ROLE

CRITICAL INFRASTRUCTURE
Downstream drinking water intakes (VDH)

PUBLIC HEALTH IMPACTS
Air monitoring (EPA, VDEM, DEQ) and health risks (VDH, ATSDR)

NATURAL RESOURCES
Environmental and wildlife impacts (DOI, USFWS, DEQ, DWR, DCR)

HAZMAT / OIL
Mitigate release (Responsible party, EPA, VDEM, DEQ)

PUBLIC INFORMATION
Media inquiries, social media trends

STAKEHOLDER INTERESTS
River keepers, wildlife rehabbers, recreationalists

RESOURCES

- Work with **Responsible Party** first to take corrective actions.
- If RP is unresponsive, unavailable, or unknown, DEQ can access contracting resources to mitigate immediate threats.
- **Contracting**
  - State-Lead Contract
  - Emergency Procurement
- **Funding Mechanisms**
  - Virginia Petroleum Storage Tank Fund
  - Virginia Environmental Emergency Response Fund

WATER SAMPLING

In partnership with DEQ's Water Quality Monitoring and Assessment Program:

- Field water chemistry measurements (pH, dissolved oxygen, conductivity)
- Water quality sampling*
- Analysis via Department of Consolidated Laboratory Services (DCLS)
- When it comes to issuing advisories, DEQ collects and provides data to VDH, and VDH reviews and makes the determination on whether to issue an advisory.

*Limited capability when acute hazardous substances are present

FEDERAL RESOURCE REQUESTS

When state capabilities are exceeded, DEQ can make a resource request to EPA and/or USCG for additional support:

- Air monitoring
- Water sampling and analysis
- Site assessments

Virginia Emergency Support Team (VEST)

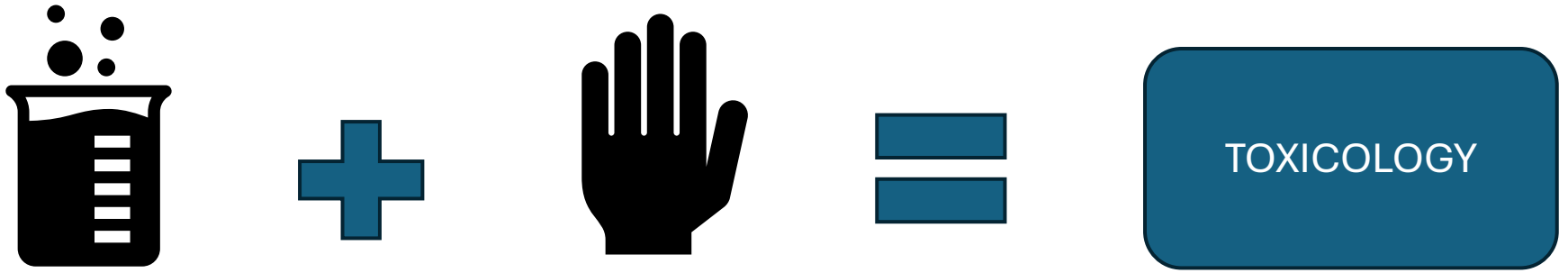
Under the Commonwealth of Virginia's Emergency Operations Plan (COVEOP), DEQ supports the VEST when activated and has the following roles/responsibilities:

- **ESF 10 (Oil/Hazmat): Co-Lead**
- ESF 3 (Public Works): Support
- ESF 8 (Public Health): Support
- ESF 11 (Agriculture): Support
- ESF 15 (Public Information): Support

VDH-Office of Environmental Health Toxicology Program

Toxicology equation

- Chemical Release + Exposure = Toxicology



What we do

1. Evaluate the toxicity and characteristics of chemical(s) released
2. Determine how the public is being exposed
3. Compare the chemical concentrations with available comparison values to determine if there is potential risk
4. If there is potential risk, calculate exposure dose

What we do

5. Evaluate health risks with acute, intermediate, and chronic exposure
6. Evaluate non-cancer and cancer health risks
7. Determine what environmental concentrations are acceptable
8. Make recommendations to reduce people’s exposure

What we Provide

1. Determine safe concentrations of chemicals in people's environment
2. Advise other VDH programs, local health districts, local and state agencies when chemical releases occur
3. Respond to public, media outlets, and officials regarding impact of chemical exposures on health
4. Prepare guidance documents, fact sheets, and other materials to help educate the public about risks of chemical exposures

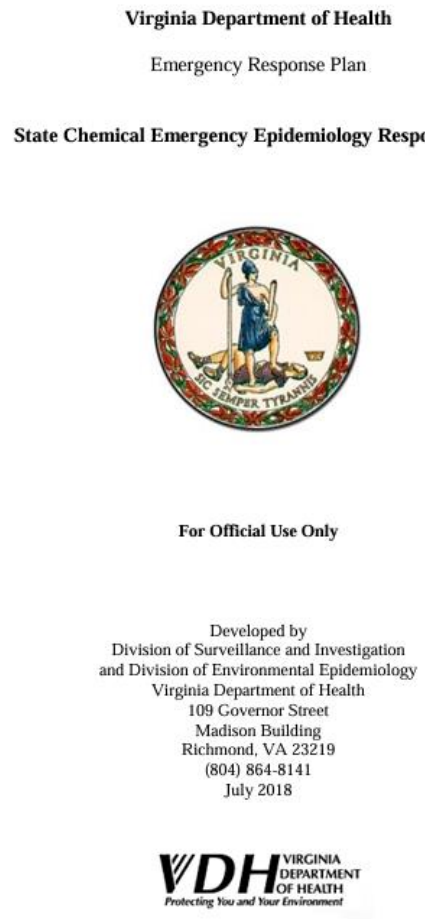
Role in Emergency Release

1. Determine if there is a hazard present
2. Determine what concentration of chemical is safe in the environment
3. Interpret environmental sampling results, make recommendations on how to respond
4. Support public education and communication efforts

Who we work with

- Federal Partners
  - Agency for Toxicology and Disease Registry
  - U.S. Environmental Protection Agency
- State and local agencies
  - Offices in VDH
  - Local Health Departments
  - Department of Environmental Quality
  - Department of Agricultural and Consumer Services

Chemical Response Plan



Virginia Department of Health

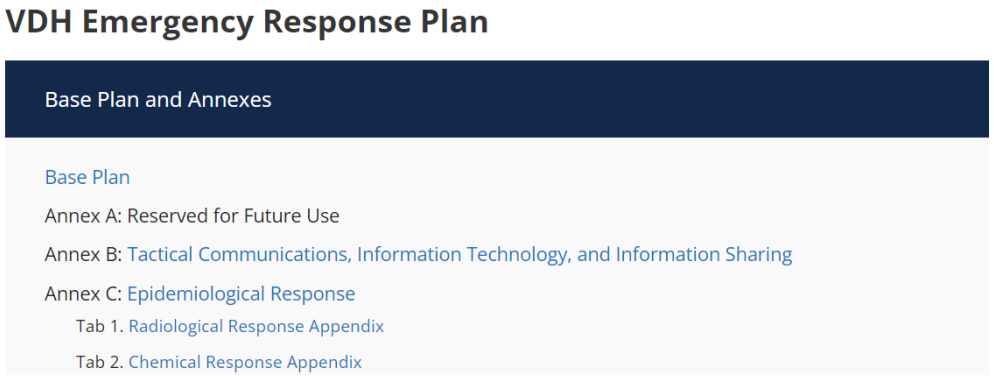
Emergency Response Plan

State Chemical Emergency Epidemiology Response Plan

For Official Use Only

Developed by
Division of Surveillance and Investigation
and Division of Environmental Epidemiology
Virginia Department of Health
109 Governor Street
Madison Building
Richmond, VA 23219
(804) 864-8141
July 2018

VDH VIRGINIA DEPARTMENT OF HEALTH
Protecting You and Your Environment



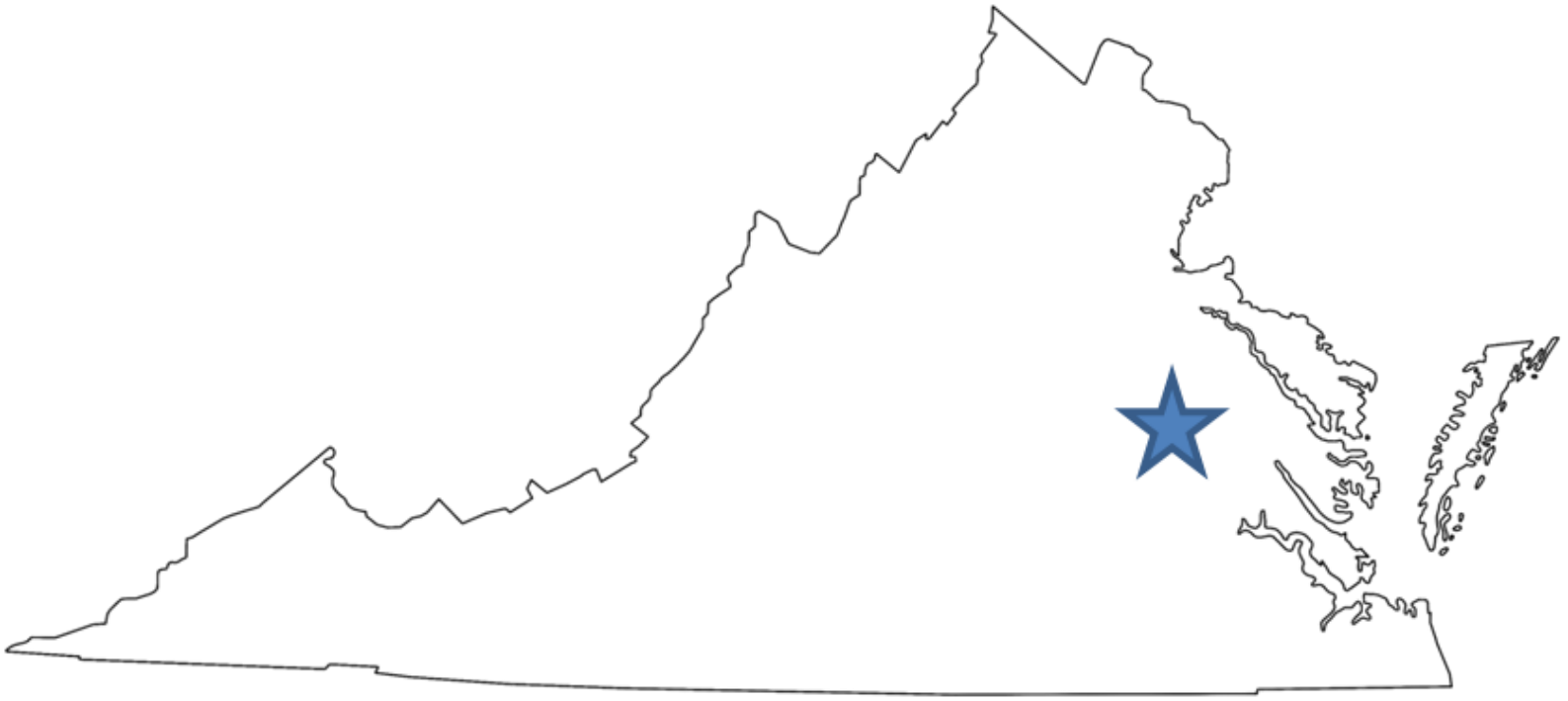
VDH Emergency Response Plan

Base Plan and Annexes

Base Plan
Annex A: Reserved for Future Use
Annex B: Tactical Communications, Information Technology, and Information Sharing
Annex C: Epidemiological Response
Tab 1. Radiological Response Appendix
Tab 2. Chemical Response Appendix

https://vdhweb.vdh.virginia.gov/emergency-preparedness

Where you can find us



- We are located in the central office in Richmond, Virginia.

How to contact us:

toxicology@vdh.virginia.gov **(804) 864-8182**

- **Dwight Flammia, PhD, State Public Health Toxicologist**

dwight.flammia@vdh.virginia.gov, (804) 864-8127

- **Amy Hayes, PhD, Health Assessor**

amy.hayes@vdh.virginia.gov, (804) 864-8187

- **Cassie McBryde, MPH, Health Educator**

cassandra.mcbryde@vdh.virginia.gov, (804) 963-2768

This presentation was made possible by a cooperative agreement [program # CDC-RFA-TS-23-0001] from the Agency for Toxic Substances and Disease Registry (ATSDR). Its contents are solely the responsibility of the Virginia Department of Health, Toxicology and do not necessarily represent the official views of the ATSDR, or the U.S. Department of Health and Human Services.

Division of Consolidated Laboratory Services

Our mission is to promote a healthier, safer world through quality laboratory service

- The Commonwealth's public health, environmental, agricultural, and consumer protection laboratory
- Providing around-the-clock, high quality analytical testing services and support to local, state and federal agencies that serve to protect the health, safety and security of the public

OVER **9 million** **TESTS** PERFORMED annually

170,000+
DRINKING & ENVIRONMENTAL WATER TESTS PERFORMED each year

OVER **1 million** **SAMPLES** RECEIVED annually

EACH YEAR **350,000+**
TEST COLLECTION KITS DISTRIBUTED

More Than **95,000** **BABIES SCREENED**
annually for **33** genetic disorders

Customers Served
Local/State/Federal Agencies

Federal

- *CDC*
- *FBI*
- *Dept. of Defense*
- *USAMRIID*
- *USDA*
- *Dept. Homeland Security*
- *FDA*
- *EPA*
- *Armed Forces Institute of Pathology*
- *NIH*
- *Others….*

State

- *Dept. of Health*
- *Dept. of Agriculture*
- *Dept. of Environmental Quality*
- *Dept. of Corrections*
- *Attorney General's Office*
- *State Police*
- *Dept. Emergency Management*
- *Dept. Labor & Industries*
- *Game and Inland Fisheries*
- *Others….*

Local

- *Fire Departments*
- *Law Enforcement*
- *Hospitals*
- *Public Health Depts.*
- *Veterinarians*
- *Animal Protection*
- *City Emergency Planners*
- *Public Water Suppliers*
- *Others….*

DCLS

DCLS' Network Participation and Partnerships

- Virginia Department of Agriculture and Consumer Services
  - FDA Food Protection Rapid Response Team
  - Manufactured Food Regulatory Programs Standards (MFRPs)
  - Customer Complaints
  - Routine inspection and retail sampling
- Virginia Department of Health
  - CDC Laboratory Response Network
  - CDC Epidemiology and Laboratory Capacity Cooperative Agreement
    - Foodborne and Waterborne, Cross-cutting Lab Capacity
  - Outbreak investigation support
- Food and Drug Administration
  - Laboratory Flexible Funding Model
- U.S. Department of Agriculture
  - Food Emergency Response Network

VDH VIRGINIA DEPARTMENT OF HEALTH

FDA USDA

LRN LABORATORY RESPONSE NETWORK CDC

VIRGINIA RAPID RESPONSE TEAM FDA DCLS VDACS VDH FOOD EMERGENCY RESPONSE NETWORK

20 years of PulseNet USA 1996 - 2016 GENOME TRAKR

VIRGINIA DEPARTMENT OF AGRICULTURE AND CONSUMER SERVICES

Virginia Agency Partnerships

- Virginia Department of Health
  - Office of Drinking Water
- Virginia Department of Environmental Quality
  - Air, soil, recreational water, surface and ground water
- Department of Corrections
  - Monitoring for illegal or improper drug use
  - Clinical specimens and wastewater

VDH VIRGINIA DEPARTMENT OF HEALTH
Healthy People in Healthy Communities

DEQ
VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

DEPARTMENT OF CORRECTIONS
Virginia
PUBLIC SAFETY FIRST

Consolidated in 1972, offering a variety of laboratory testing services in support of public health

- Newborn Screening
- Lab Certification
- Drugs of Abuse
- Clinical
  - Microbial Reference
  - Immunology and Virology
  - Molecular Detection and Characterization
  - Sequencing and Bioinformatics
- Environmental Regulatory
  - Inorganic Nonmetals
  - Trace Organics
  - Motor fuels
  - Pesticides
  - Metals
  - Water Microbiology
  - Radionuclides

- Food Regulatory
  - Food Microbiology
  - Food Chemistry
  - Feed and Fertilizer
- Support Laboratories
  - Scientific Services
  - Sample Support Services
  - Data and Information
- Emergency Response
  - CDC: Laboratory Response Network – Biological and Chemical
  - Food Emergency Response Network (FERN): Biological, Chemical, and Radiochemical

Emergency Response Activities

- Chemical spills/releases
- Animal poisonings
- Suspicious mail
  - Unknown powders
  - Glitter bombs
- Malicious use/misuse of chemicals
- Rabies virus testing
- Droughts and hurricanes
- Infectious Disease outbreaks
  - Measles and Mumps
  - Influenza
  - Norovirus
- Unexplained illnesses/deaths
- Ebola and Zika viruses

Chemical and Radiological Agent Detection

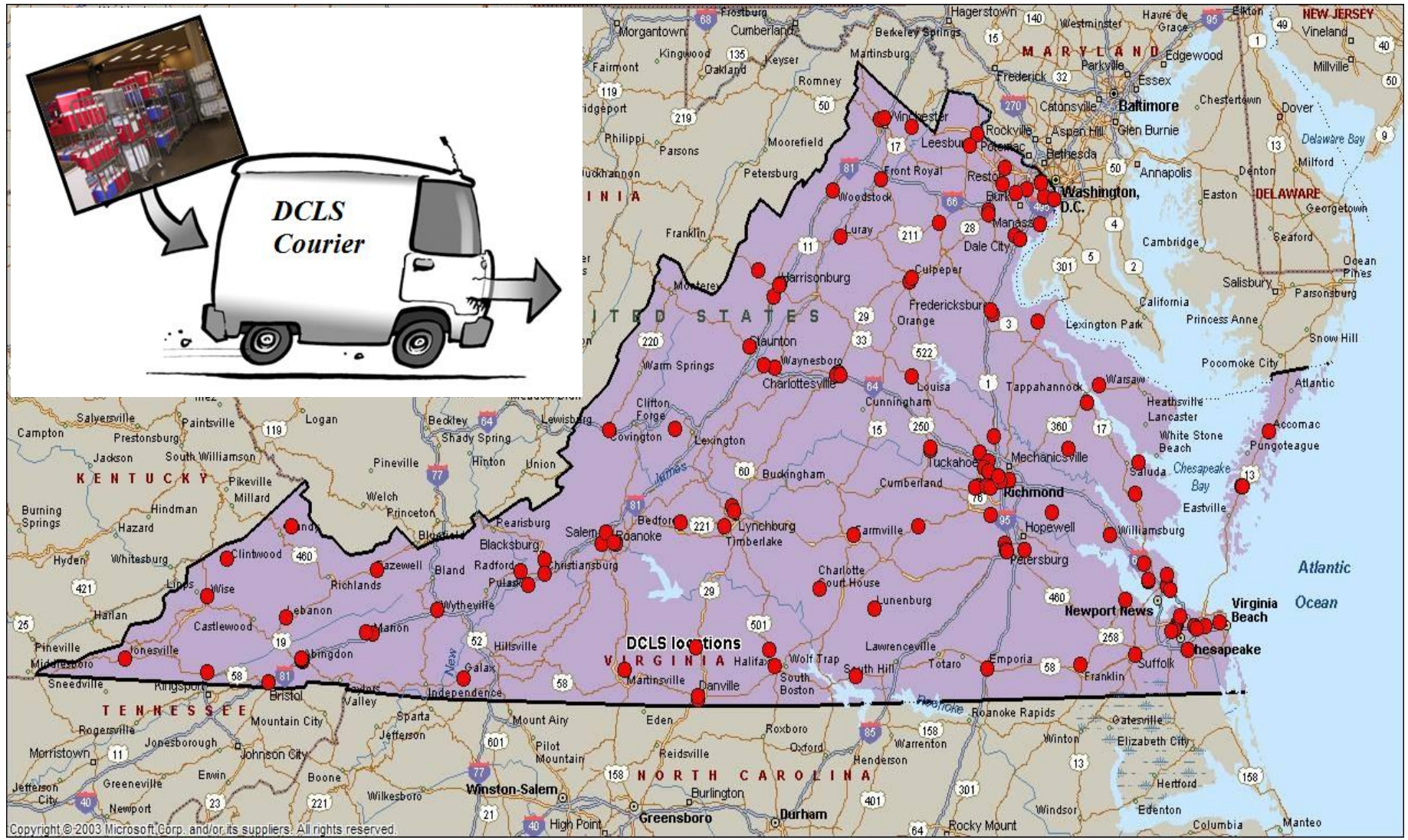
- Analysis type depends on
  - Suspected agent and sample type
  - Natural or accidental release, intentional release, terrorism related
- Types of agents
  - Chemical: Organic, inorganic, pesticides, metals, volatiles, semi-volatiles
  - Radiological: Alpha, Beta, Gamma
- Types of samples
  - Human specimens
  - Food and beverages
  - Environmental – air, water, soil

Sample Collection and Handling

- Samples/specimens are received daily from hospitals, health departments, law enforcement, DEQ offices, VDH Programs, VDACS, and distributes others
- DCLS prepares collection kits for use by Virginia agencies and partners for clinical and environmental sample collection
- Instructions for collection, handling, and transport of samples available on DCLS website
  - Division of Consolidated Laboratory Services
- Contact DCLS for emergency testing and sample transport needs
  - After hours emergency number

    804-335-4617

DCLS Statewide Courier



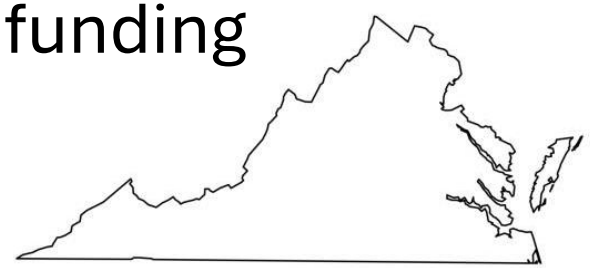
Chemical Emergency Response

Chemical Emergency Response Testing

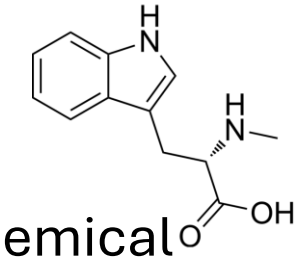
- Laboratory Response Network – Chemical (LRN-C)
  - CDC
- Food Emergency Response Network (FERN)
  - FDA
  - USDA

Laboratory Response Network

- Established in 1998 by the Centers for Disease Control and Prevention
- Virginia was one of the original four laboratories selected to receive LRN funding



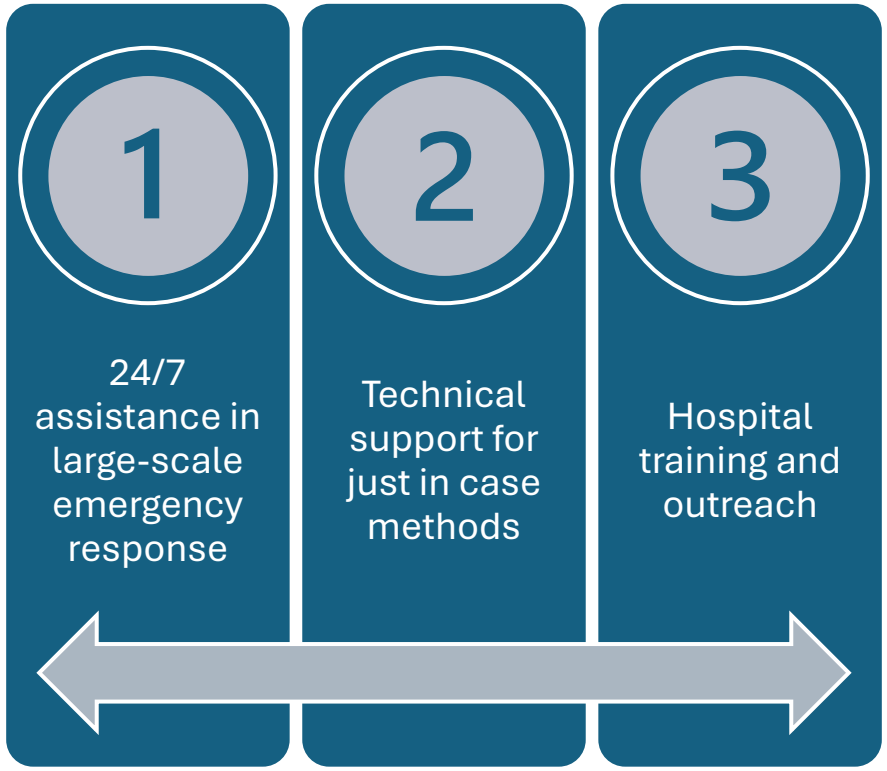
- Chemical
  - Responds to chemical terrorism and other public health emergencies



- Biological
  - Detect biological threats and emerging infectious disease quickly and accurately

LRN
LABORATORY RESPONSE NETWORK

Laboratory Response Network –Chemical (LRN-C)

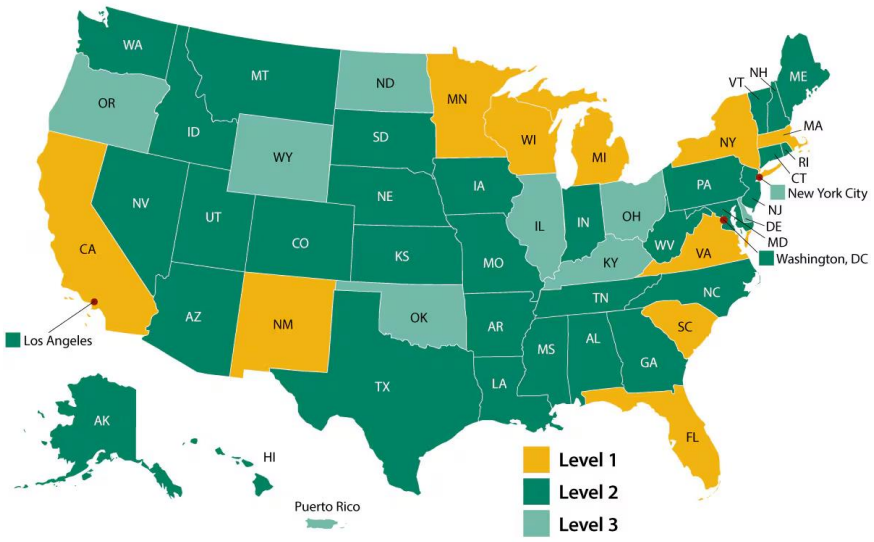


CDC Surge Capacity Model

- 10 Level-1 laboratories
- 44 laboratories can identify toxic chemical exposures
- 54 member laboratories located in the U.S. and one U.S. territory
- All laboratories without testing capabilities are trained to package and ship to other network laboratories in the event of an emergency
- ~ 8,500 clinical samples can be processed, tested, and reported to CDC within a 24-hour period network-wide

LRN
LABORATORY RESPONSE NETWORK

LRN-C



- Human exposure to chemical weapons or industrial chemicals
- Urine, whole blood, and serum specimens
- Surge capacity for large-scale emergencies

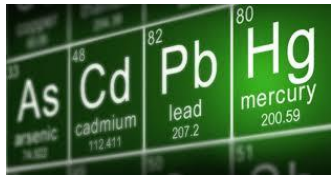
LRN
LABORATORY RESPONSE NETWORK

LRN-C Partnerships

- Founding partners

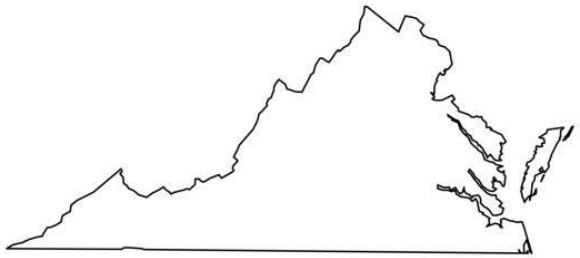
What can DCLS test for in clinical specimens?

Chemical weapons metabolites	Metals	Pesticides	Toxic industrial chemicals	Toxic gases
• Lewisite • Nitrogen mustards • Organophosphate nerve agents • Sulfur mustards	• Arsenic, inorganic • Arsenic, total • Barium • Beryllium • Cadmium • Lead • Mercury • Thallium • Uranium	• Carbamates • Organophosphates • Tetramine	• 1, 2-Dichloroethane • Benzene • Carbon tetrachloride • Chloroform • Ethylbenzene • Styrene • Tetrachloroethylene • Toluene • m+p-Xylene • o-Xylene	• Cyanide



Food Emergency Response Network (FERN)

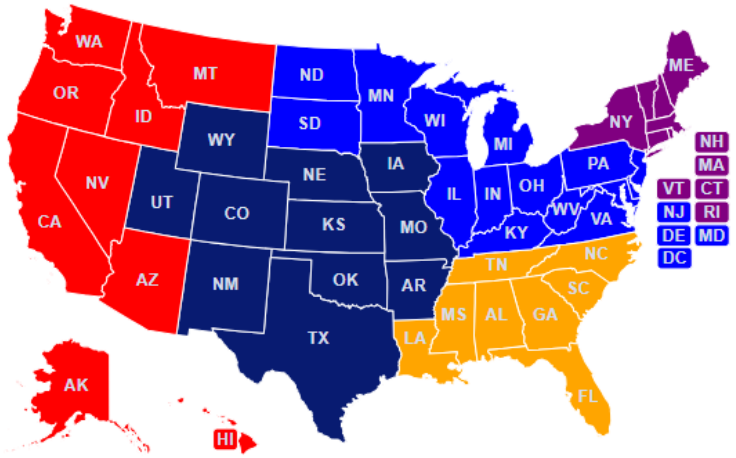
- Established by the FDA and USDA in 2004
- Virginia was one of the original laboratories selected to receive FERN funding



- Outbreak testing
- Surveillance
- Total dietary studies

- Testing disciplines
  - Biological
  - Chemical
  - Radiochemical

FERN



Central region

- Integrates most food testing laboratories at federal, state, and local levels
- Approximately 168 laboratory members located in all 50 states and Puerto Rico

FERN

- Food defense
  - Laboratory surge capacity
  - Screening for poisons and toxins
  - Increasing capability/capacity
- Human food product testing

What chemicals can DCLS test for in foods and beverages?

Toxic and Nutritional Elements

- Arsenic, inorganic
- Arsenic, total
- Cadmium
- Copper
- Chromium
- Lead
- Manganese
- Mercury
- Molybdenum
- Nickel
- Selenium
- Strontium
- Thallium
- Tungsten
- Zinc

Cannabinoids

- Δ8-THC
- Δ9-THC
- Δ10-THC (R & S)
- Cannabidiol

Drugs, Pharmaceuticals and Controlled Substances

- 1,3-Dibutylamine
- Amphetamines
- Cocaine
- Opiates or Opioids

What chemicals can DCLS test for in foods and beverages?

Poisons and Toxins

- Alkaloid toxins
- Ethylene glycol
- Mycotoxins
- Ricinine

Pesticides

- Brodifacoum
- Diazinon
- Ethiofencarb
- Oxamyl
- Tetramine

Other

- Amygdalin
- Cyanuric acid
- Fluoroacetate
- Melamine

But what if the causative agent is unknown?

Chemical Terrorism Preparedness and Response Laboratory

- On call 24/7/365
- Staff members rotate weekly

- Instructions available for sample collection, packaging, and shipping of unknowns

How does DCLS analyze unknown samples?

- Non-targeted screening for various chemicals
- High resolution mass spectrometry
- Detection and confirmation in clinical, environmental, and food matrices

Summary

- DCLS, as a state laboratory, is committed to providing comprehensive and quality laboratory testing services for our customers and the citizens of the Commonwealth
- Our efforts continue to focus on laboratory technologies and partnerships which enable Virginia to respond to current and future public health, environmental, agricultural, and consumer protection needs
- Chemical emergency response testing for clinical, food, and environmental matrices is available 24/7
- DCLS has the capacity to respond to large-scale emergencies involving chemicals and human exposures

DCLS

Contact us!

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Virginia's CHEMPACK Program

Introduction and Overview

- This presentation is targeted towards:
  - Hospital personnel
  - First responders (Police, Fire, EMS)
  - 911 Communications Center personnel
  - Public health personnel
  - Local emergency managers

Objectives

- Describe the Chempack Program
- Determine which situations may require Chempack assets
- List the agencies involved in Chempack
- Explain the roles involved in Chempack

What is CHEMPACK?

Chempack containers are federally owned, locally managed packages of pharmaceuticals to treat patients following a chemical/nerve agent exposure. These containers are stored in secure locations in local jurisdictions around the country to enable rapid response to an incident.

Three medical countermeasures are included in the CHEMPACK to treat the effects of nerve agent exposure:

- Atropine Sulfate
- Pralidoxime (2PAM)
- Diazepam – treats seizure activity

Virginia Allocations

- Virginia has 50 Chempack containers strategically located in 42 locations throughout the commonwealth
  - 42 EMS Containers
  - 8 Hospital Containers

- Over 97% of Virginia's population is within one hour of a container

What is CHEMPACK?

These medications are provided in different configurations of autoinjectors and multi-dose vials.

Container Configurations

EMS Containers:

- Geared towards field use
- 85% autoinjectors
- Estimated number of doses – 454

Hospital Containers:

- Geared to clinical care environments
- 85% multi-dose vials
- Estimated number of doses - 1,000

Note - the two can be used interchangeably

Why Chempack?

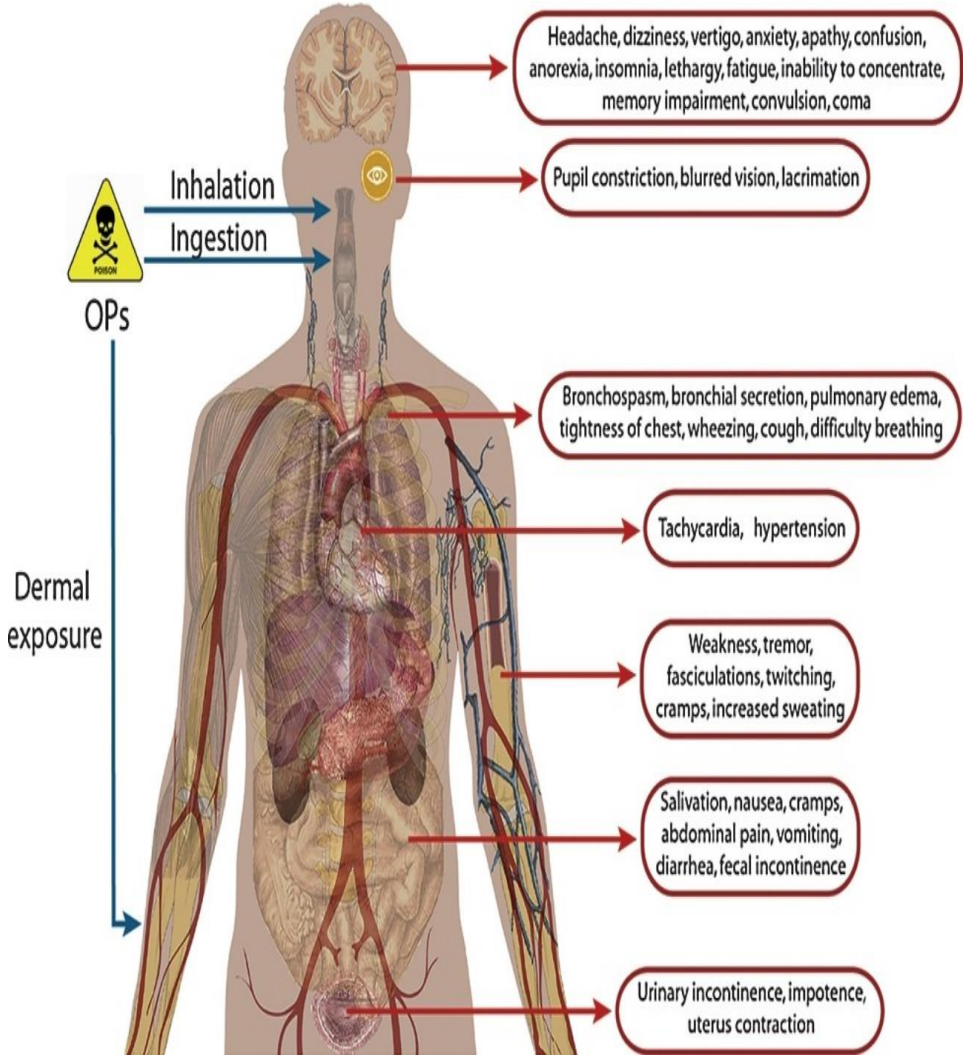
- To provide, monitor, and maintain a nationwide program for the forward placement of nerve agent antidotes.
- To provide state and local governments a sustainable resource and improve their capability to respond quickly to a nerve agent incident.
- Nerve agents can cause rapid nervous system failure
- Antidotes can reverse symptoms if administered in a timely manner
- Most hospitals & pharmacies don’t stockpile nerve agent antidotes
- CHEMPACK antidotes are packaged to be rapidly administered

What are the benefits of the Chempack Program?

- State, local governments, and hospitals, typically have limited chemical/nerve agent antidote stocks.
- The forward placement and position of CHEMPACKs allows for a much faster deployment of antidotes for local use versus the SNS twelve-hour response time.
- Federal assets are available to the locality at little to no cost other than the maintenance storage requirements.
- Assets are maintained locally and replenished as they’re needed.
- The Chempack Program participates in the extended shelf-life program.

Nerve Agents and Organophosphates

- One of several categories of potentially harmful chemicals
- Can be inhaled, swallowed, or absorbed through the skin
- They attack the central nervous system and can result in serious injury or death



Nerve Agents / Organophosphate Pesticides

Type	Names	Characteristics
Chemical Weapons	**-GB (Sarin)** **-GA (Tabun)** **-GD (Soman)** **-GF (Cyclosarin)** **-VX** **-Fourth Generation Agents (FGA)**	-Extremely toxic (very low LD_{50}) -Can be inhaled, swallowed, or absorbed through the skin & mucous membranes -Highly persistent; pose a significant cross contamination hazard -Most likely to be encountered as a liquid rather than vapor (do not easily evaporate) -FGAs are very low volatility nerve agents
Organophosphate Pesticides	**-Parathion** **-Malathion** **-Chlorpyrifos** **-Diazinon** **-etc.**	-Low to medium toxicity (less than chemical weapons) -Can be inhaled, swallowed, or absorbed through the skin & mucous membranes -Used as insecticides -Commonly used in agricultural practices

Nerve Agent / Organophosphate Exposure Pneumonics

S.L.U.D.G.E.

Salivation (excessive production of saliva)
Lacrimation (excessive tearing)
Urination (uncontrolled urine production)
Defecation (uncontrolled bowel movement)
Gastrointestinal distress (cramping)
Emesis (excessive vomiting)

B.A.M.

Breathing difficulty (wheezing)
Arrhythmias (bradycardia, ventricular arrhythmias, AV blocks)
Miosis (pinpoint pupils)

Three C's of CNS effect

Confusion
Convulsions
Coma

D.U.M.B.E.L.S. (Muscarinic)

Diarrhea
Urination
Miosis
Bradycardia / Bronchospasm / Bronchorrhea
Emesis
Lacrimation
Salivation / Secretion / Sweating

Days of the week (Nicotinic)

Mydriasis
Tachycardia
Weakness
Hypertension / Hyperglycemia
Fasciculation's

Notable Nerve Agent Attacks

- Tokyo Subway attack, Sarin
  - March 20, 1995
  - 5 coordinated attacks on 3 lines of the Tokyo Metro during rush hour
  - 688 ambulance transports
  - 278 hospitals saw 5,510 patients
    - 17 critical exposures
    - 37 severe exposures
    - 984 moderate exposures with vision problems
    - The rest (~85%) were considered “worried well”
    - 14 fatalities
      - 13 in the first 48 hours. A 14th was bedridden for 25 years and passed away in 2020. *Tanaka, Richi; Tatsumi, Kenji (20 March 2020). "Woman bedridden since AUM cult's 1995 sarin gas attack on Tokyo subway dies at 56". The Mainichi. Retrieved 6 May 2021*

When Should a Chempack Container be Deployed?

CHEMPACK resources should be deployed in the event of a suspected nerve agent / organophosphate incident that has the potential to:

- Overwhelm local supplies of antidotes
- Put lives at risk
- Threaten the health of the community

Who can request or Open a Chempack Container?

CHEMPACK resources can be requested or opened at the discretion of a competent authority.

- Ultimately, the request is at the discretion of the on-scene incident commander, hospital physician, or hospital pharmacist.
  - Can be Fire, EMS, HazMat (field).
  - Can be deployed for internal hospital use.
  - Can be deployed to another hospital.
- Approval from VDH/ASPR is **not** required to open the container in the event of an emergency.

How to Request a Chempack Container

A Chempack Container can be requested for quick deployment according to the policies and procedures of Local Health District and its partners.

- Each Local Health District is responsible for coordinating with local partners to develop a deployment and use plan that meets the needs of the district and its partners.
- If you don’t know what your area deployment and use plan looks like, please contact your VDH Local Health Emergency Coordinator
- The Regional Healthcare Coordination Center (RHCC), VDH, and the Local Health District all play a role in communicating and coordinating resources during and after deployment.

VDH Roles and Responsibilities

State Level

- Maintain state program guidance.
- Coordinate with ASPR/SNS on agreements, product sustainment, and security measures.
- Develop backup deployment plans.
- Make appropriate notifications in the event of a deployment.
- Coordinate non-emergency container moves.
- Support local/regional training and exercises.

Local Level

- Develop, maintain, and exercise local deployment plans in conjunction with local fire, law enforcement, emergency management, and hospital partners.
- Conduct quarterly inspections.
- Coordinate shelf-life extension program (SLEP) drop shipments.
- Coordinate site visits for upgrades and calibration.
- Maintain partnerships and meet regularly to maintain awareness of Chempack resources.

Notification Protocols & Deployment