# Chemical Threat Response

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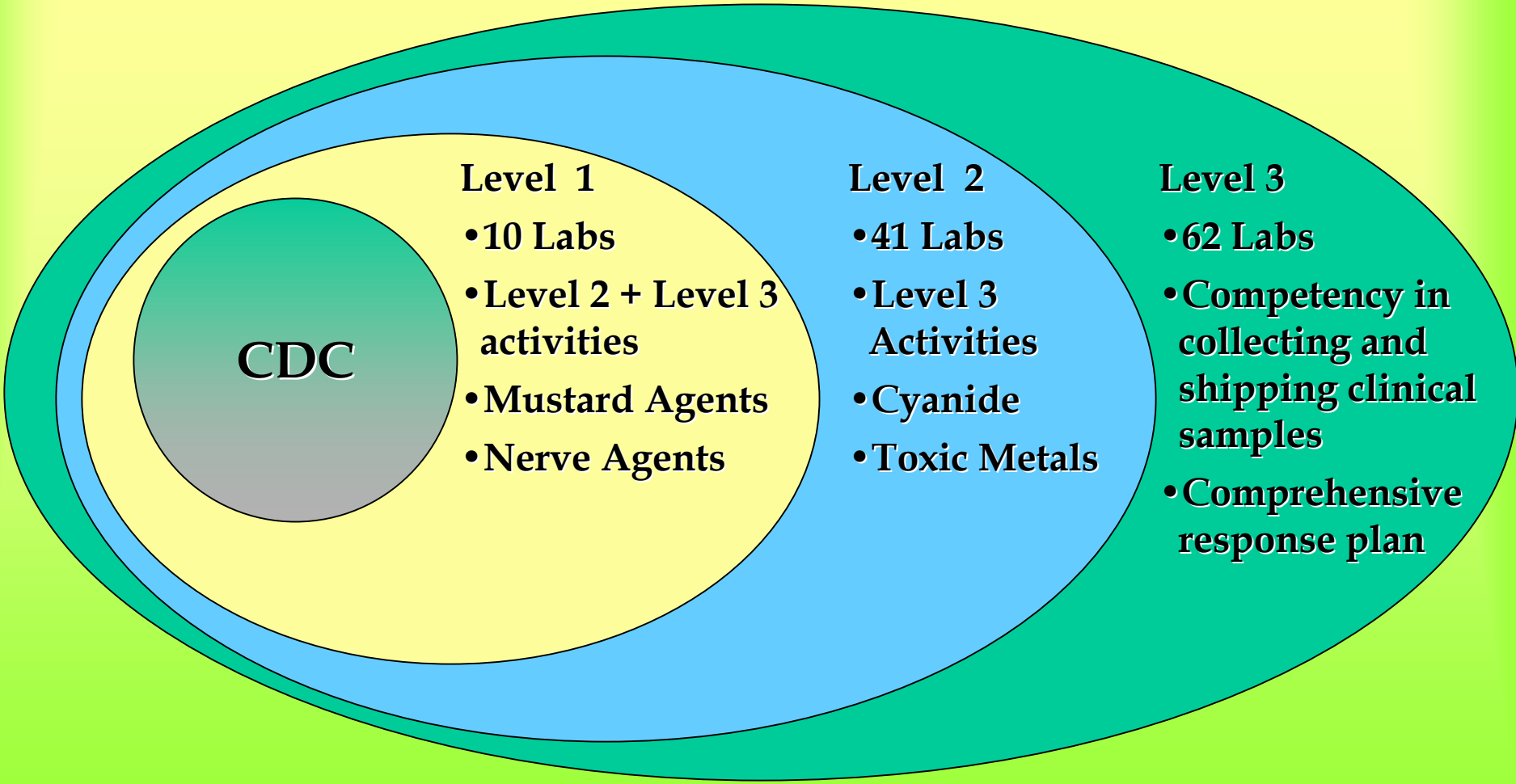
# Center for Disease Control

- Set up and funded the Laboratory Response Network (LRN)
- Currently there are two LRN groups
  - Biological (LRN-B)
  - Chemical (LRN-C)
- The LRN-C has three laboratory levels

# Chemical Testing Capacity



# LRN Structure—Chemical Terrorism

- Currently, 62 state, territorial, and metropolitan public health laboratories participate in the chemical portion of the LRN. A designation of Level 1, 2, or 3 defines member network participation, and each level builds upon the preceding level.

- Every network member participates in Level 3 activities. These **Level 3** laboratories work with hospitals in clinical specimen collection, storage, and shipment. They also work to develop a coordinated response plan for their state and geographical regions.

# LRN Structure—Chemical Terrorism

- Ten laboratories do Level 1 activities
- This includes all Level 2 toxic agents
- Level 1 also do an expanded number of chemicals including those that indicate exposure to mustard and nerve agents along with ricin toxin
- Forty-one labs are **Level 2**
- Trained to detect exposure to a limited number of toxic chemical agents such as cyanide or toxic metals
- **Texas is a Level 2+ lab**

# Rapid Toxic Screen

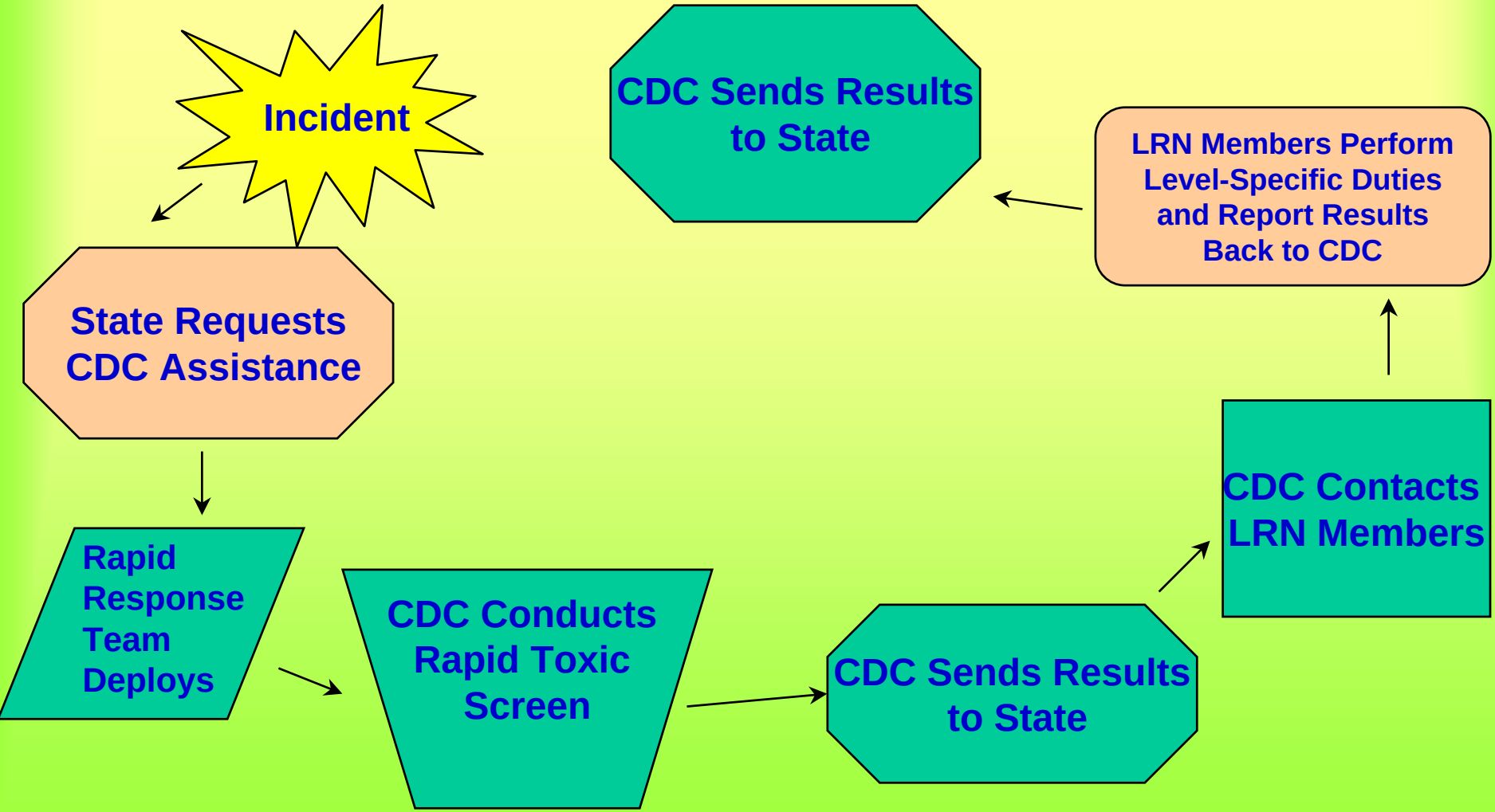
1. At the onset of an event, a state **<u>may</u>** request CDC's assistance.
2. CDC will deploy a Rapid Response Team to the affected state to assist with specimen collection, packaging, storage, and shipment.
3. The first 40 samples from people with symptoms are sent to CDC for analysis through the **Rapid Toxic Screen**, which can analyze people's blood and urine for a large number of chemical agents likely to be used by terrorists.
4. Data produced from the Rapid Toxic Screen analysis will be communicated in a secure, electronic manner to the affected state or states.

# Preparing to Respond to a Chemical Event

CDC is assisting LRN Labs by

- Purchasing instrumentation
- Developing training curricula
- Transferring analytical methods
- Implementing a quality assurance program

# Responding to a Chemical Event

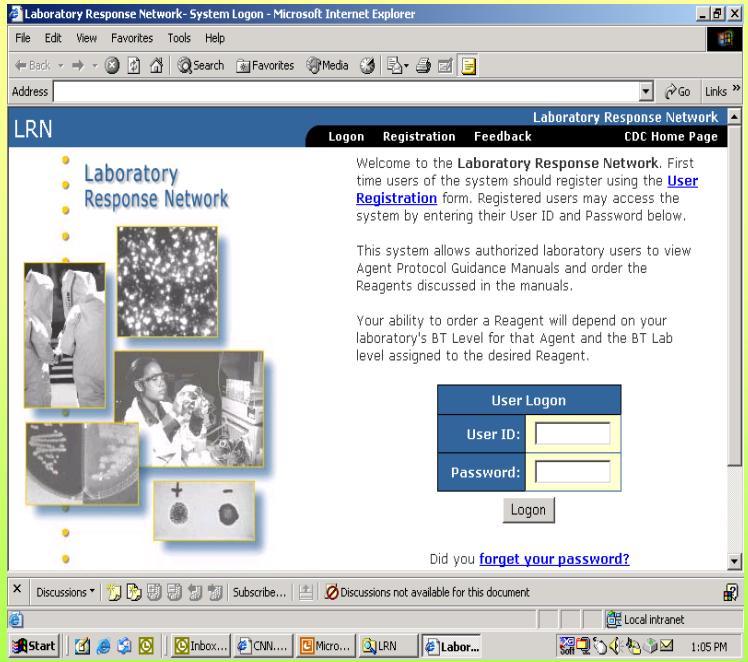


# Provided to Each LRN Lab

- Standardized Reagents & Controls
- Agent-Specific Protocols
- Lab Referral Directory
- Secure Communications
- Electronic Laboratory Reporting
- Training & Technology Transfer
- Proficiency Testing
- Appropriate Vaccinations for Lab Workers

# Information Technology Support

- Provides secure access for more than 1,700 LRN Lab workers
- Secure communications on emerging and emergency issues
- Order reagents
- View protocols for PCR and TRF assays
- Report and review proficiency tests
- Receive periodic updates regarding reagent availability, etc.



# Partners in All Facets of Biological & Chemical Terrorism Preparedness and Response

- The American Association of Veterinary Laboratory Diagnosticians
- The American Society for Microbiology
- The Environmental Protection Agency
- U.S. Department of Agriculture
- U.S. Department of Defense
- U.S. Department of Energy
- U.S. Food and Drug Administration
- The Department of Homeland Security

# Ready to Respond

In the event of a terrorist act or other public health emergency, the LRN is poised to:

- **Test thousands of clinical specimens and environmental samples using its multi-level network of state, food testing, clinical, veterinary, military, and federal labs.**
- Coordinate the laboratory response of CDC, law enforcement agencies, public health, and others.
- Accept and transfer specimens to appropriate facilities, including the CDC where definitive testing can be done.
- Assure a rapid laboratory response to any public health emergency.

# LRN Formula for Success

- Unified operational plan
- Standardized protocols and tests
- Secure communications
- **Molecular diagnostics******
- Rapid response and reporting
- Safe, secure laboratories
- Trained laboratorians
- **Coverage for human, animal, food, environmental specimens*******
- CDC coordinated support and oversight
- Quality laboratory results

******* NOT FOR CHEMICAL EVENTS!**

# Future Directions

- CDC supports the use of the LRN-C system to perform bio-monitoring
- CDC has been developing methods to analyze samples for “unknown” substances
- Potential areas for bio-monitoring include exposure to:
  - Metals
  - Organo-phosphate pesticides
  - Toxic Industrial Chemicals


LRN
LABORATORY RESPONSE NETWORK
PARTNERS IN PREPAREDNESS