

**CDC Public Health Preparedness Conference 2005**

# **State Public Health Laboratory Bioterrorism Capacity**

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# Objectives

- To report results from APHL's 2004 Bioterrorism Laboratory Preparedness Survey
- To describe improvements and remaining gaps in public health laboratory capability and capacity
- To describe the current state of public health laboratory preparedness
- To highlight the need to sustain funding for bioterrorism laboratory preparedness activities

# Method

- APHL surveyed 50 states, DC, and 4 territories
- 52 responses received (all 50 states, DC, and Puerto Rico)
- Reflects bioterrorism capability and capacity as of August 31, 2004
- Includes activities from January 2003 through August 2004

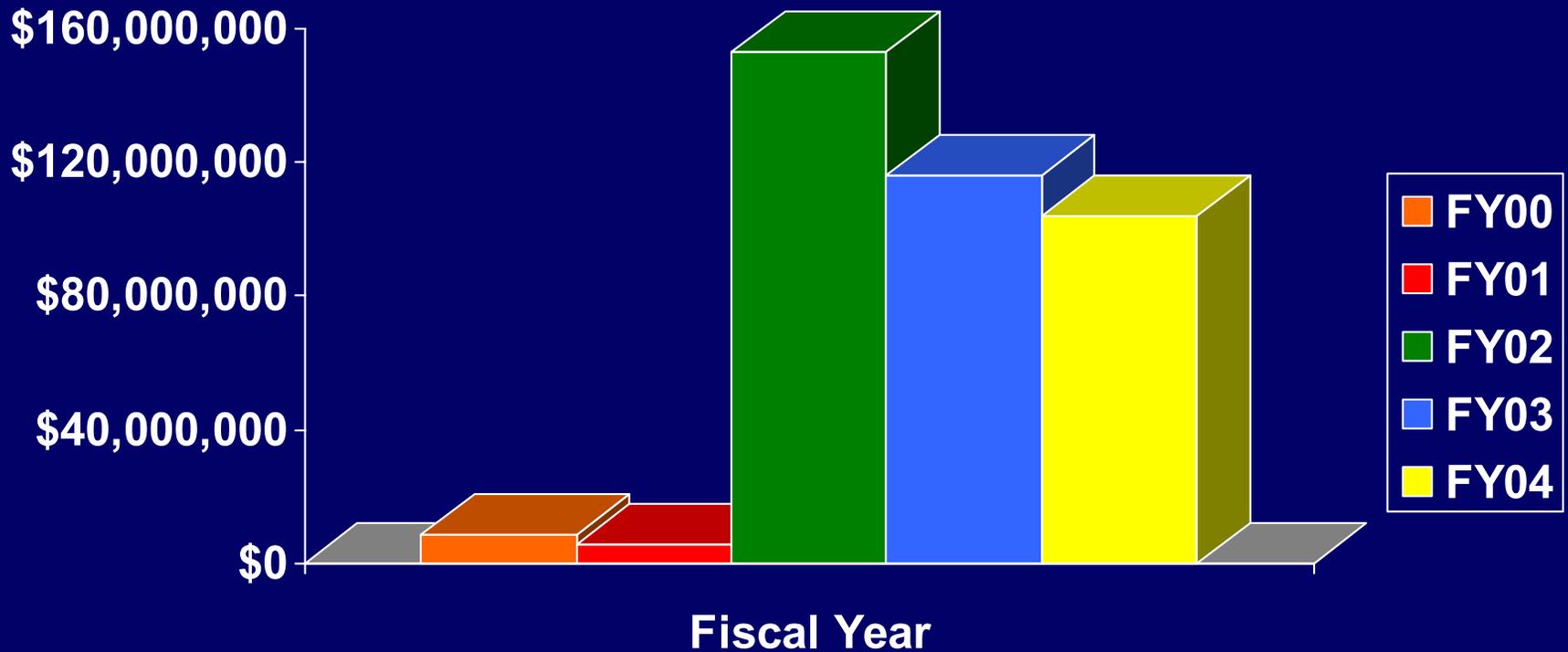
# Data

- Funding and benchmarks
- Workforce
- Facilities and biosecurity
- Equipment and supplies

# Data

- Smallpox preparedness
- Training, laboratory connectivity, and integration
- Transportation and courier service

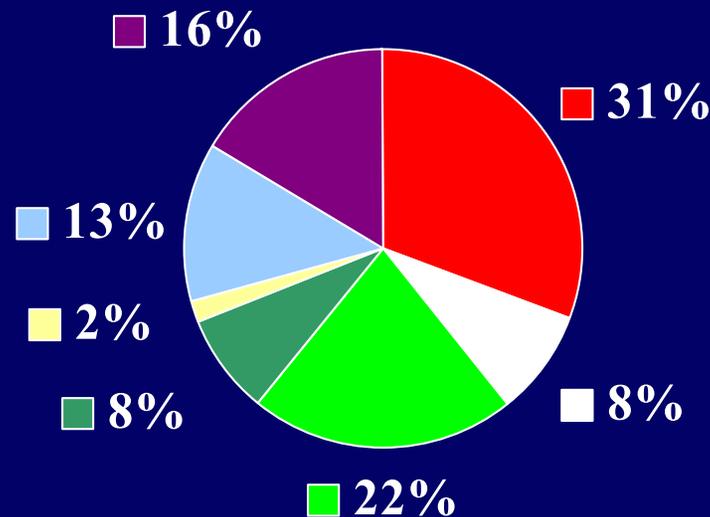
# FY00-FY04 Public Health Lab Bioterrorism Funding



# Funding and Benchmarks

- Federal and state funds cut
- 22 labs had average reduction of 12%
- 5 labs received funding from DOJ
- 25 labs indicate having designated funds for testing of food after a recognized intentional contamination

# 2004 Bioterrorism Funding for Public Health Labs



Total = \$97,873,701 million



# Laboratory Response Network (LRN)

CDC and USAMRIID  
Labs

**National**  
(definitive characterization)

Formerly Level B/C  
Labs

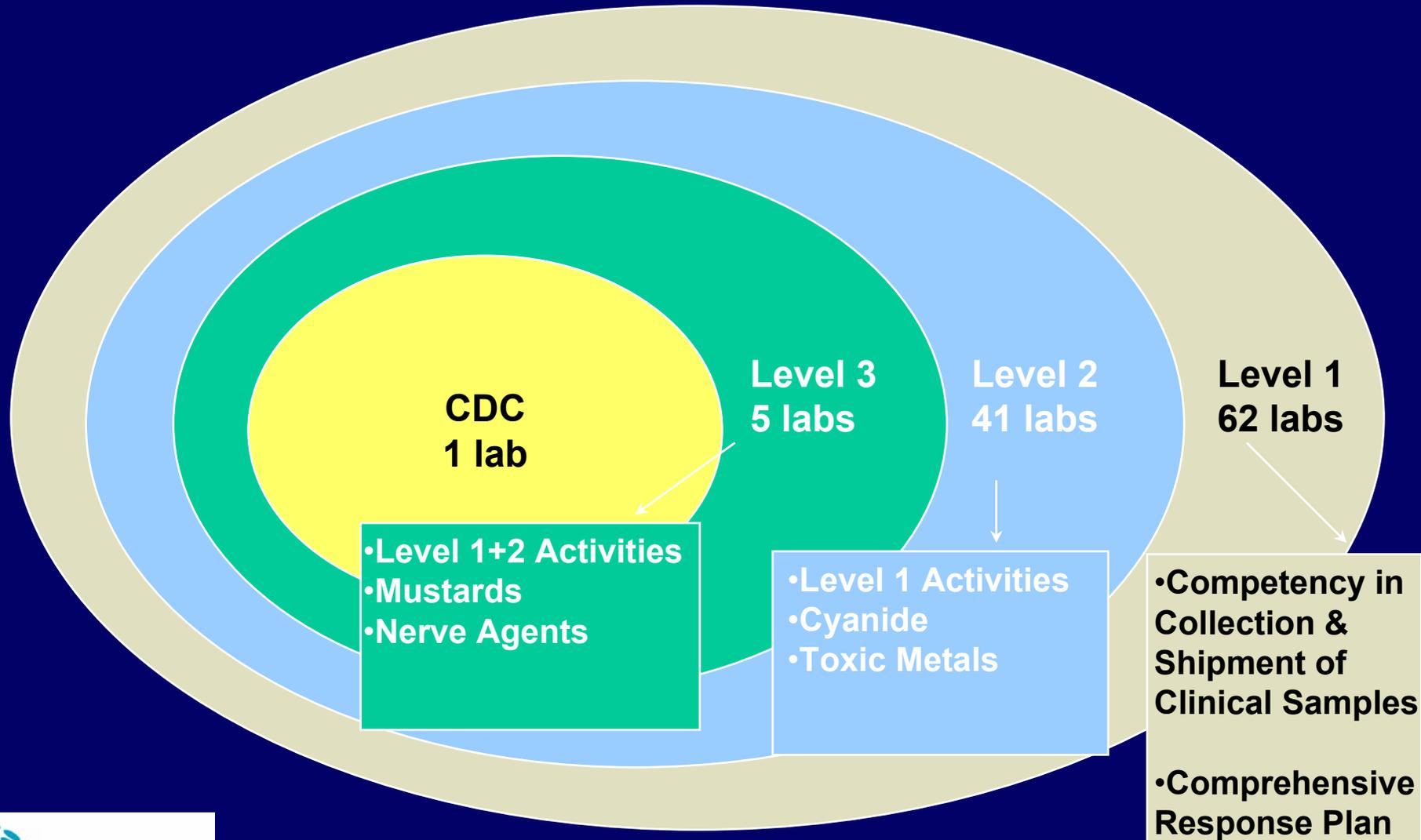
**Reference**  
(confirmatory testing)

Formerly Level A  
Labs

**Sentinel**  
(recognize, rule-out, refer)



# Chemical Testing Capability



# Public Health Laboratories: Backbone of the LRN

- Testing of clinical and environmental samples
  - Over 25,000 “unknown” samples tested
    - 90% environmental samples
    - Threat letters, powders, unknown packages, food, and samples from the Postal Service
- Validation of new protocols
- Training and coordination of sentinel labs

# Public Health Laboratories: Backbone of the LRN

- Coordination with epidemiologists
- Coordination with public health response teams
- Coordination with law enforcement

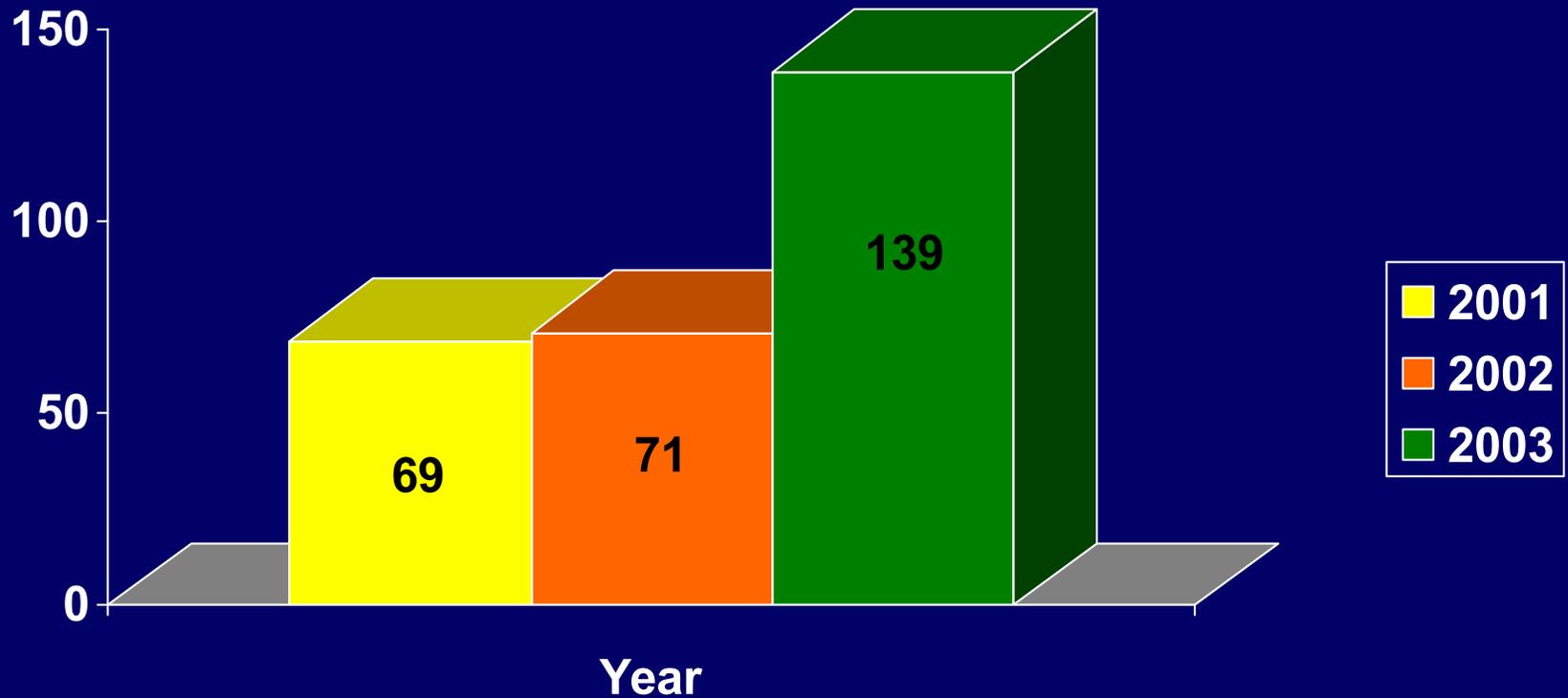
# Workforce

- Over 132 new employees hired
- States lost highly skilled laboratorians
- Recruiting pool is dismal
- Additional staff needed for all areas

# Facilities and BioSecurity

- 25 states lack triage facilities
- 46 states have BSL-3 suites
- 70 additional BSL-3 suites needed
- Many labs have upgraded security systems
- Many labs continue to enhance their facilities

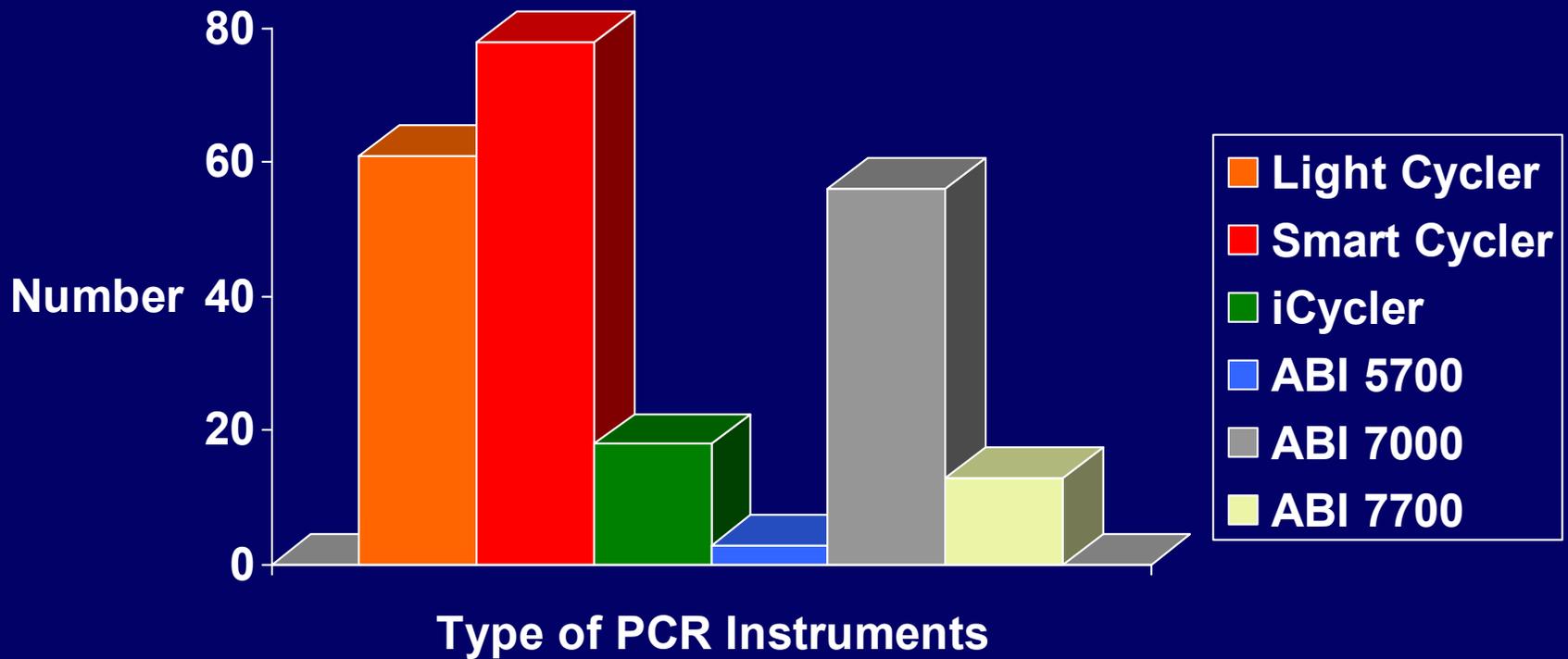
# Number of BSL-3 Suites



# Equipment and Supplies

- Upgrade and purchase new instruments
- Adopt new technologies
  - 34 Lack Luminex Technology
- LRN Reagents
  - Much needed national repository of reagents to support LRN laboratories testing capacity

# PCR Instruments



# Smallpox Preparedness

- 50 labs have rapid detection of VZV
- 19 labs have a validated smallpox PCR assay
- Gaps:
  - Electron microscopy (EM) facilities
  - PCR assays for other look-alike diseases
    - Herpesviruses
    - Enteroviruses.

# Training and Laboratory Connectivity

- 49 labs sponsored sentinel training
- Total of 717 courses
- Over 9,000 laboratorians trained
  - Training covered rule-out testing, packaging and shipping, and biosafety guidelines

# Training and Laboratory Connectivity

- 42 labs have a BT Training Coordinator
- 51 labs maintain a sentinel lab database
- 44 labs have conducted capability assessments of sentinel laboratories

# Transportation and Courier Service

- 28 states have a intra-state courier system
- 16 states provide full-state coverage for all types of specimens

# Gaps

- Need for national guidelines to triage unknown samples
- Need to address environmental sampling and testing of chemical and biological agents
- Need for a National Repository of Reagents for the LRN

# Gaps

- Need federal commitment to invest more in the education and training of a skilled public health laboratory workforce
- Need continued investments in public health laboratories
- Need sustained funding to ensure national readiness

# Resources

- [www.aphl.org](http://www.aphl.org)
- [www.bt.cdc.gov](http://www.bt.cdc.gov)

# Questions