Status of the Integrated Consortium of Laboratory Networks

September, 2023

Report to Congress

Homeland Security

Message from the Acting Chief Medical Officer of Homeland Security

September 2023

I am pleased to submit the following report, *Status of the Integrated Consortium of Laboratory Networks*, prepared by the Department of Homeland Security, in consultation with the Departments of Agriculture, Defense, Health and Human Services, and the Environmental Protection Agency.

This report was prepared pursuant to Section 203, Integrated Consortium of Laboratory Networks, of the Food and Drug Administration Food Safety Modernization Act (Pub. L. No. 111-353) (codified at 21 U.S.C. § 2222), which mandates a biennial report to the relevant congressional committees on the progress of the Integrated Consortium of Laboratory Networks.

Pursuant to congressional requirements, this report is provided to the following Members of Congress:

The Honorable Gary C. Peters
Chairman, U.S. Senate Committee on Homeland Security and Governmental Affairs

The Honorable Rand Paul
Ranking Member, U.S. Senate Committee on Homeland Security and Governmental Affairs

The Honorable Mark E. Green
Chairman, U.S. House of Representatives Committee on Homeland Security

The Honorable Bennie G. Thompson
Ranking Member, U.S. House of Representatives Committee on Homeland Security

Should you have any questions, please do not hesitate to contact the Office of Health Security.

Sincerely,

Dr. Herbert O. Wolfe
Chief Medical Officer (Acting)
Director (Acting), Office of Health Security

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Executive Summary

This report, required by the Food and Drug Administration (FDA) Food Safety Modernization Act (FSMA), Public Law 111-353, codified at 21 U.S.C. § 2222, provides the current status of Integrated Consortium of Laboratory Networks (ICLN). The ICLN is an integrated system of federal laboratory networks and was established to assist federal agencies to respond to acts of terrorism and other events through a coordinated laboratory response. The ICLN mission is to coordinate federally sponsored analytical laboratory services for chemical, biological, radiological, nuclear (CBRN), and public health incidents. The ICLN plans, identifies resources for laboratory surge capacity support, and defines key process steps for information and data sharing during an incident.

This report summarizes accomplishments of the ICLN from September 1, 2020, through September 30, 2022 (the month of September 2020 plus the fiscal years of 2021 – 2022). During the initial development phase of the ICLN (2005 – 2015), the program was managed by the Department of Homeland Security (DHS) Science and Technology Directorate (S&T), however once the ICLN was deemed an operational entity, management of ICLN was transitioned to the DHS Office of Health Affairs (OHA). In December 2017, the Department effectuated a reorganization to establish the Countering Weapons of Mass Destruction Office (CWMD), which, in part, transferred the resources and responsibilities of OHA to CWMD, with the exception of workforce health and medical functions which were reorganized into the Management Directorate. On December 21, 2018, Congress enacted the Countering Weapons of Mass Destruction Act (CWMD Act), providing an express statutory basis for CWMD's authorities and responsibilities. Effective July 2022, pursuant to a Departmental reorganization, the Office of Health Security (OHS) was established by realigning certain medical, public health and workforce health and safety activities of the Department, including coordination of Department of Homeland Security efforts related to food, agriculture, and veterinary defense (6 U.S.C. § 321q), into one office under the Office of the Secretary and Executive Management. As part of this reorganization, the ICLN Program was transferred to the new OHS and is positioned within the OHS Health, Food and Agriculture Resilience Directorate.

ICLN brings together seven federally sponsored laboratory networks (member networks) under a common framework to assist in integrated and coordinated responses to acts of terrorism and other major CBRN and public health incidents (see Figure 1). Member networks agree to provide requisite analytical capability and capacity to process samples collected during CBRN and public health incidents for which their proponent agencies are responsible, subject to their respective statutory authorities and as directed by their chain of command. Because some CBRN and public health incident response scenarios may present a larger number of samples requiring analysis than a given network can process in a reasonable time, the ICLN framework helps to address gaps in laboratory analytical capability and capacity within a single member network by engaging other member networks across the ICLN. Through the ICLN, laboratories in member networks share information and data in support of situational awareness and effective consequence management. The ICLN coordinates efforts of member laboratory networks under their common framework; it does not supersede any other relationships, policies, or operating procedures of those networks.

The ICLN is collaborative effort for preparedness to large-scale contamination or other public health incidents largely because of key accomplishments in three areas outlined in FSMA. First, ICLN networks established laboratory methods as well as validation and quality assurance guidance enabling quality testing of multiple sample types, including human clinical, environmental, food, plant, and animal clinical samples. The ability of member network laboratories to support multiple networks was demonstrated through an array of internetwork support coordination exercises. Second, the ICLN Portal and its Data Exchange Utility (DEU) provide a means for members to work cooperatively to optimize national laboratory preparedness and organize surge capacity during emergencies and aggregate and share data in a single database from all member networks participating in a joint response. Finally, ICLN coordinating bodies and member networks continue to engage in ongoing dialogue, exercises, drills, interagency collaborations, and other activities building relationships to support effective integrated responses during emergencies. This report provides a list of ICLN activities and successes completed in fiscal years 2021 and 2022.

Pursuant to requirements outlined in Section 203, Integrated Consortium of Laboratory Networks, of the FSMA, this report fulfills the responsibility of the Secretary of Homeland Security in outlining the ICLN's progress during the reporting period of September 1, 2020, through September 30, 2022.

Legislative Language

In accordance with the Food Safety Modernization Act (FSMA), Section 203, codified at 21 U.S.C. § 2222:

(a) The Secretary of Homeland Security, in coordination with the Secretary of Health and Human Services, the Secretary of Agriculture, the Secretary of Commerce, and the Administrator of the Environmental Protection Agency, shall maintain an agreement through which relevant laboratory network members, as determined by the Secretary of Homeland Security, shall:

I. Agree on common laboratory methods in order to reduce the time required to detect and respond to foodborne illness outbreaks and facilitate the sharing of knowledge and information relating to animal health, agriculture, and human health;

II. Identify means by which laboratory network members could work cooperatively:

   a. To optimize national laboratory preparedness; and
   b. To provide surge capacity during emergencies; and

III. Engage in ongoing dialogue and build relationships that will support a more effective and integrated response during emergencies.

(b) Reporting requirement

The Secretary of Homeland Security shall, on a biennial basis, submit to the relevant committees of Congress, and make publicly available on the Internet Web site of the Department of Homeland Security, a report on the progress of the integrated consortium of laboratory networks, as established under subsection (a), in carrying out this section.

This report is publicly available on the ICLN website at https://www.icln.org/about.cfm and on the DHS website at https://www.dhs.gov/publication/status-integrated-consortium-laboratory-networks.

Background of the Integrated Consortium of Laboratory Networks

The ICLN was established by a Memorandum of Agreement (MOA) initially signed in June 2005 and subsequently updated and re-validated in 2012 and 2016 by member networks. These signatory agencies include the U.S. Department of Agriculture (USDA), Department of Defense (DoD), Department of Energy (DOE), Department of Health and Human Services (HHS), Department of Homeland Security (DHS), Department of the Interior (DOI), Department of Justice (DOJ), Department of State (DOS), and the Environmental Protection Agency (EPA). The ICLN was established to provide a nationwide, integrated system of federal laboratory

networks to assist in responding to acts of terrorism and other events requiring an integrated laboratory response.

Signatory agencies recognize that capabilities of independent laboratory networks, such as the Centers for Disease Control and Prevention's (CDC) Laboratory Response Network (LRN) and the EPA's Environmental Response Laboratory Network (ERLN), can be leveraged in situations requiring resources and laboratory capacities exceeding the capabilities of one laboratory network. The ICLN supports coordination of federally sponsored analytical laboratory services for CBRN and other public health incidents, including emerging infectious disease/pandemics, through internetwork strategic and operational planning, identification of roles and responsibilities, communication and information sharing, and resource and response coordination.

The ICLN contributes to stronger early detection and consequence management capabilities, consistent with the following requirements:
- Homeland Security Presidential Directives (HSPD)-5 (Management of Domestic Incidents)
- HSPD-21 (Public Health and Medical Preparedness)
- HSPD-22 (Domestic Chemical Defense)
- PPD 7 (Critical Infrastructure Security and Resilience)
- Presidential Policy Directive (PPD) 8 (National Preparedness)
- National Strategy for Biosurveillance
- 2022 National Biodefense Strategy and Implementation Plan for Countering Biological Threats, Enhancing Pandemic Preparedness, and Achieving Global Health Security
- 2022 National Security Memorandum-15 (National Biodefense Strategy and Implementation Plan for Countering Biological Threats, Enhancing Pandemic Preparedness, and Achieving Global Health Security)
- 2022 National Security Memorandum-16 (Strengthening the Security and Resilience of United States Food and Agriculture)

The ICLN also complements and supports:
- 2012 National Strategy for Biosurveillance and the Food Safety Modernization Act (2011)
- Emergency Support Functions (ESF) included in the National Response Framework, specifically:
  - ESF-3: Public Works and Engineering
  - ESF-5: Information and Planning
  - ESF-8: Public Health and Medical Services
  - ESF-10: Oil and Hazardous Materials Response
  - ESF-11: Agriculture and Natural Resources
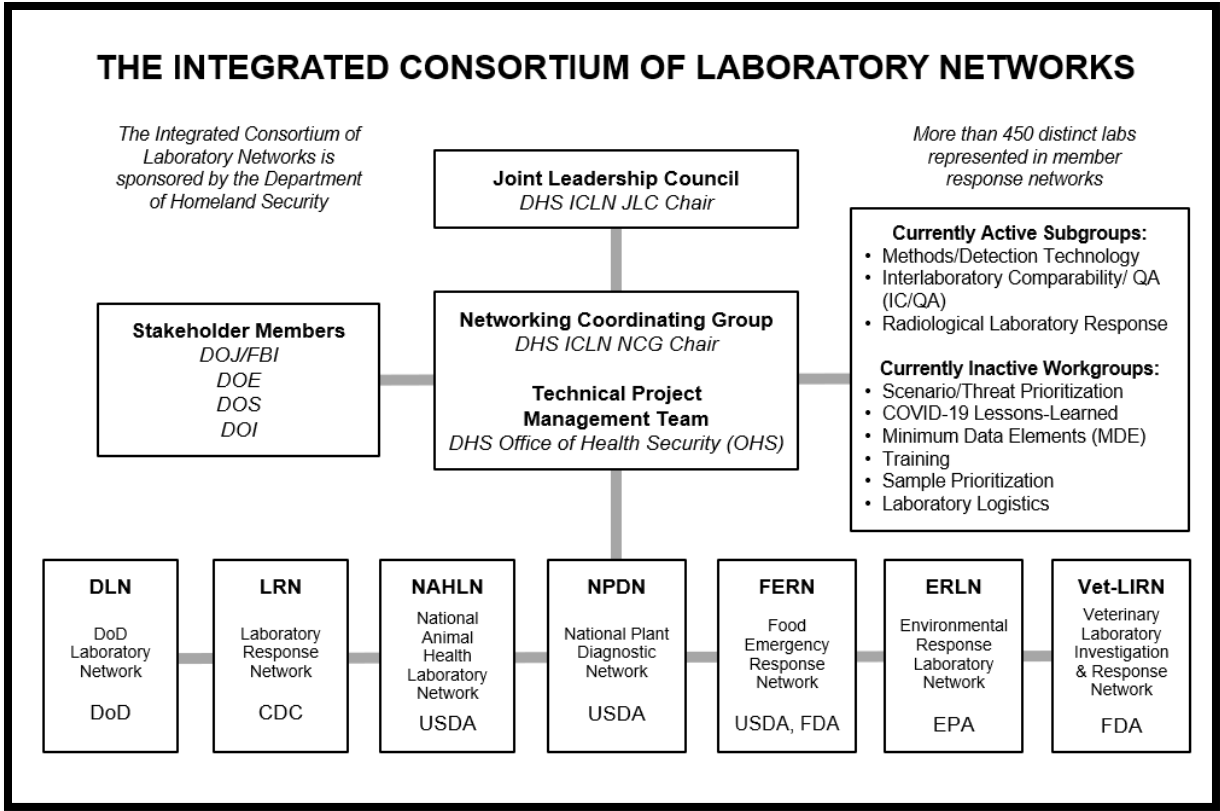 - ESF-13: Public Safety and Security

Note that these lists are not comprehensive; there are likely many other requirements, policies and activities that are supported by analytical laboratory data in the event of a large scale CBRN incident.

As outlined in the ICLN's MOA (2016), the ICLN helps fulfill the Nation's need for a coordinated system of federal laboratory networks capable of integrated and coordinated response to incidents involving:

- Multiple types of microbes (e.g., emerging infectious disease), agents (e.g., chemical, biological, radiological, and nuclear), or mixed or unknown agents, where sampling, testing, interpretation of results, and response must be closely coordinated.
- Multiple sampling matrices, where laboratory testing is needed in multiple sample types (e.g., human clinical, environmental, food, plant, and animal) and where there is overlap in the need for methods, training facilities, equipment, reagents, and staff to carry out the testing.
- More than one sector or segment of the Nation (e.g., humans, animals, plants, food, and the environment) or more than one type of laboratory (e.g., surveillance, screening/sentinel, confirmatory, forensic, and definitive reference).
- Multiple phases of incident management (e.g., monitoring, emergency response, remediation/recovery, and forensic investigations).

Figure 1 depicts the ICLN organizational structure. Principal organizational elements include a Joint Leadership Council (JLC), a Network Coordinating Group (NCG), technical subgroups, and a Technical Project Management Team (TPMT). The DHS OHS chairs the NCG and the JLC and provides administrative support through a TPMT staffed via a support contract. OHS is the executive agent for day-to-day management of the ICLN's functional utilities and resources (e.g., the ICLN Portal, laboratory databases).

THE INTEGRATED CONSORTIUM OF LABORATORY NETWORKS

The Integrated Consortium of Laboratory Networks is sponsored by the Department of Homeland Security

More than 450 distinct labs represented in member response networks

Joint Leadership Council
DHS ICLN JLC Chair

Stakeholder Members
DOJ/FBI
DOE
DOS
DOI

Networking Coordinating Group
DHS ICLN NCG Chair

Technical Project Management Team
DHS Office of Health Security (OHS)

Currently Active Subgroups:
- Methods/Detection Technology
- Interlaboratory Comparability/ QA (IC/QA)
- Radiological Laboratory Response

Currently Inactive Workgroups:
- Scenario/Threat Prioritization
- COVID-19 Lessons-Learned
- Minimum Data Elements (MDE)
- Training
- Sample Prioritization
- Laboratory Logistics

DLN	LRN	NAHLN	NPDN	FERN	ERLN	Vet-LIRN
DoD Laboratory Network	Laboratory Response Network	National Animal Health Laboratory Network	National Plant Diagnostic Network	Food Emergency Response Network	Environmental Response Laboratory Network	Veterinary Laboratory Investigation & Response Network
DoD	CDC	USDA	USDA	USDA, FDA	EPA	FDA

Figure 1. Organizational Structure of ICLN

The JLC includes at least one senior policy member from each federal department or agency that participates in the ICLN. The council provides executive-level advocacy, policy guidance and support to the NCG, particularly when issues arise that cannot be resolved at the NCG level. The JLC guides the ICLN in systemwide strategic planning through the NCG and approves inclusion of additional networks into the ICLN, and modifications to the ICLN MOA. The JLC typically meets with the NCG on an annual basis.

The NCG is the focal point of federal network coordination. NCG membership consists of officially designated member laboratory network representatives with responsibility and authority to facilitate progress on ICLN goals and objectives. The NCG is the primary body responsible for coordination across networks, which consists of establishing guidelines, analytic methods, and common data exchange and knowledge management procedures. The NCG also establishes and guides the ICLN technical subgroups in support of their roles to create standardized and integrated approaches for the ICLN and provide technical guidance on critical issues. The NCG meets monthly to discuss interagency issues, consider recommendations from the technical subgroups, and plan internetwork exercises to promote overall system readiness.

The TPMT provides technical administrative support to the organizational elements of the ICLN, including the JLC, NCG, and technical subgroups. The DHS ICLN NCG Chair provides federal direction and oversight of the TPMT. TPMT activities include managing internetwork communications, convening meetings, facilitating actions approved during meetings, assisting

with writing of technical reports, serving as point of contact for external outreach and communications, exercise support, as well as providing technical IT support for ICLN Portal implementation, hosting, data management, maintenance, and incremental improvement.

As depicted in Figure 1, seven networks comprise analytical resources currently encompassed by the ICLN: DoD Laboratory Network (DLN); Laboratory Response Network (LRN [LRN-B and LRN-C]); National Animal Health Laboratory Network (NAHLN); National Plant Diagnostic Network (NPDN); Food Emergency Response Network (FERN); Environmental Response Laboratory Network (ERLN); and Veterinary Laboratory Investigation and Response Network (Vet-LIRN). Four collaborating agencies (DOE, DOI, DOS, and Federal Bureau of Investigation (FBI)) are also members of the ICLN. The analytical scope of each of these networks is described below.

DoD Laboratory Network: The Department of Defense's DLN is a coordinated and operational system of DoD laboratories, programs, and activities possessing analytic and/or incident response capabilities. The DLN provides timely, high-quality, actionable results for early detection, confirmation, and effective consequence management of acts of terrorism or warfare involving CBRN agents, infectious disease agents, and other all-hazards agents of military or national significance in support of the DoD's global and homeland defense missions. In accordance with applicable laws governing the DoD and the Federal Government, the DLN provides support to civil authorities and participates in ICLN integrated incident responses.

Laboratory Response Network: The LRN is managed by HHS CDC. This includes the CDC LRN-Biological (LRN-B), the CDC LRN-Chemical (LRN-C), and the CDC Radiation Analytical Toxicology Laboratory. It is a joint effort among CDC, DOJ, FBI, the Association of Public Health Laboratories, and DoD. The current mission of the LRN is "to develop, maintain and strengthen an integrated domestic and international network of laboratories to respond quickly to biological, chemical, and radiological threats and other high priority public health emergency needs through training, rapid testing, timely notification, and secure messaging of laboratory results."

National Animal Health Laboratory Network: The NAHLN is a cooperative effort between two USDA agencies, the Animal and Plant Health Inspection Service (APHIS) and the National Institute of Food and Agriculture (NIFA). The implementation and success of the NAHLN relies heavily on partnership among the state and university animal diagnostic laboratories that meet NAHLN's capability and capacity requirements – the American Association of Veterinary Laboratory Diagnosticians and the State Animal Health Officials. The network's purpose is to enhance the Nation's early detection of, response to, and recovery from animal health emergencies, including bioterrorist incidents, newly emerging diseases, and foreign animal disease agents that threaten the Nation's food supply and public health.

National Plant Diagnostic Network: The NPDN is managed by USDA NIFA. The mission of NPDN is to enhance national agricultural security through rapid and early detection, diagnosis, and timely communication of outbreaks of potentially damaging pests of food, feed, fiber, fuel crops, and forest trees. NPDN is designed to protect plant health and the productivity of U.S. agricultural and natural ecosystems by providing early detection and identification of plant pests

and diseases and to enhance agricultural biosecurity by detecting instances of biological attacks. The network is supported by the collective efforts of federal, state, and land grant university-associated plant disease clinics. NPDN collaborates with APHIS to provide essential testing capacity for regulated pests and manage sample surge during outbreaks.

Food Emergency Response Network: The FERN is a partnership managed by USDA's Food Safety and Inspection Service and HHS's FDA. Laboratories participating in FERN at the federal, state, and local level are responsible for detecting and identifying biological, chemical, and radiological agents in food. The primary objectives of FERN are to help prevent attacks on the food supply through utilization of targeted food surveillance; prepare for emergencies by strengthening laboratory capabilities and capacities to respond to threats, attacks, and emergencies in the food supply; and assist in recovery from such an incident. Program commodities could include, but are not limited to, imports, school lunch programs, and special events such as political conventions, major sporting events, or other events where large or high-profile groups of people are gathered.

Environmental Response Laboratory Network: The ERLN is managed by the U.S. Environmental Protection Agency's (EPA) Office of Emergency Management. The ERLN is a comprehensive, all-hazard/all-environmental media laboratory network that can be activated as needed to provide analytical data of known quality in support of environmental emergency response and recovery actions. The ERLN integrates the capabilities of public sector laboratories with accredited private sector laboratories and can be used to support incidents of any scale during the preparedness, response, and remediation phases. The ERLN's goals are to: 1) provide environmental laboratory testing capability and capacity to meet EPA's responsibilities for surveillance, response, decontamination, and recovery from incidents involving the release of chemical, biological, or radiological contaminants; 2) facilitate coordination of laboratories capable of responding efficiently and effectively to incidents; and 3) establish relationships and priorities with other federal laboratory networks through the Integrated Consortium of Laboratory Networks in preparation for a major environmental event. The ERLN is a recognized homeland security asset and provides EPA emergency responders with access to vetted labs with a broad spectrum of analytical capabilities.

Veterinary Laboratory Investigation and Response Network: The Vet-LIRN is managed by FDA's Center for Veterinary Medicine. The primary objective of Vet-LIRN is to promote human and animal health by partnering with more than 40 state and university veterinary diagnostic laboratories. Vet-LIRN laboratories help FDA investigate potential adverse events affecting the Nation's food or animal feed supply by testing animal diagnostic samples, veterinary products, or animal feeds. Vet-LIRN laboratories develop and harmonize chemistry and microbiology testing methods for nontypical biomatrices and analytes to maintain preparedness. Vet-LIRN offers a wide variety of proficiency exercises to network laboratories to evaluate capability. The network coordinates monitoring, and stewardship efforts related to antimicrobial resistance.

ICLN Subgroups/Workgroups

Permanent subgroups and ad hoc workgroups support NCG activities and decision-making by providing consultation on matters such as quality assurance, logistics, and methods. Over time, some active workgroups fulfilled their functionality and were phased out accordingly. As examples, former ad hoc workgroups that are currently inactive include Coronavirus Disease 2019 (COVID-19) Lessons-Learned, Minimum Data Elements (MDE) Workgroup, Training, Sample Prioritization, and Laboratory Logistics. If the need to revisit the topical issue of a specific workgroup becomes apparent, then it will be reinstated.

Currently active ICLN subgroups include Methods Detection Technology, Interlaboratory Comparability/Quality Assurance Subgroup (IC/QA) (formerly the Proficiency Testing/Quality Assurance Subgroup), and the Radiological Laboratory Subgroup. These subgroups typically comprise subject matter experts from federal, state, and local laboratory communities. A federal staff member within the response laboratory network system chairs each subgroup. Subgroups and workgroups review key issues and network requirements as assigned by the NCG, such as agent prioritization, methods development and standards, information technology, and training requirements; they also devise recommendations for operational options under consideration by the NCG and inform perspectives on evolving internetwork policies. Additionally, these subgroups and workgroups produce reports and other technical products within their purview for the ICLN, which the NCG reviews, approves, and publishes.

Common Laboratory Methods and Information Sharing

The ICLN implemented a series of efforts to establish common laboratory methods and facilitate sharing of analytical methods to better prepare for and execute joint responses to large-scale incidents. The ICLN developed a Methods Registry that lists agents for which methods are available and cross-references them with several key attributes, including a matrix for which method is suitable; method level of validation; method instrumental parameters; and a point of contact within the originating agency for further detailed information on the method. At present, methods registry contains methods information for agents from within the chemical, biological, and radiological threat areas and across human clinical, animal clinical, food, and environmental matrices. Registry is accessible to approved ICLN member network staff via the secure, password protected ICLN Portal at icln.org.

The ICLN Methods and Detection Technology Subgroup is responsible for periodically updating information in the methods registry. Method development relies on funding and staff available within the member network proponent agencies (see Figure 1). Principal responsibility for prioritization of agents for method development, however, resides in the ICLN Scenarios/Threat Prioritization Subgroup. Risk assessments performed by DHS are viewed as an important source of information to guide agent prioritization.

To ensure a common understanding of methods and their appropriate applications, the ICLN recognized the need to establish some key guidelines and supports development of several documents conveying these guidelines:

- Methods Validation Standard Operating Procedure (SOP).[1] This document, publicly accessible via the ICLN Portal, broadly informs the process of defining and communicating the level at which method performance is understood in practice. Levels of validation extend from characterization of the method by a single originator in one laboratory (level 1) to full statistical characterization by multiple laboratory analysts across a large number of laboratories (level 4). Methods Validation SOP classifies validation of methods used by member network laboratories in response to a CBRN incident.
- Chain of Custody Form.[2] This resource, also publicly available at the ICLN Portal, documents custody, control, transfer, and disposition of samples. Such documentation, which follows each sample being analyzed, is critical to ensuring individual lab results are associated with the correct sample and sample source. There is no universal standard form, and the ICLN imposes no requirement on any member network to use this particular form. However, all networks must use some process/mechanism to ensure correct linkage of results with samples and the sample source, and the ICLN Chain of Custody Form provides a model template for new networks to use should the need arise.
- Sample Collection and Handling Guidelines.[3] This document, also available at www.icln.org, provides the principles and procedures for sample handling to ensure that samples are appropriately and consistently handled across member networks. These guidelines help to ensure samples are not contaminated or allowed to deteriorate prior to analysis in the laboratory.

During the reporting period, the ICLN added methods for Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2), influenza A and B, and abrin (a biological toxin) to the Methods Registry. It also updated the Methods Validation SOP, Chain of Custody Form, and Sample Collection and Handling Guidelines (all publicly accessible at icln.org). The Methods Subgroup also considered implications of the eventual removal from the marketplace of two commercial diagnostic platforms commonly used in laboratories for toxin and polymerase chain reaction (PCR) analyses.

Optimizing Preparedness and Surge Capacity

The ICLN was formed to enable federal laboratory networks to work cooperatively to optimize preparedness and provide analytical surge capacity in the event of large-scale incidents requiring resources and capabilities of more than one network. To manage networks' joint participation in resolving a major incident, as well as to facilitate collaboration in developing guidance

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[1] https://www.icln.org/documents/ICLN_Validation_Levels_Between_Networks_12062021.pdf
[2] https://www.icln.org/documents/Chain-of-Custody-form_Jan28_2022.pdf
[3] https://www.icln.org/documents/ICLN-Sample%20Collection%20and%20Handling.002.02_updated%20Sept%202022.pdf

documents and information repositories, the ICLN developed a web utility known as the ICLN Portal. A critical component of this portal is a means to aggregate laboratory data from federal laboratory networks into a common data format and make aggregated data searchable by network(s) having primary responsibility for resolving an incident, per their proponent agency's mission. This data aggregation tool is the Data Exchange Utility (DEU).

The ICLN developed an SOP to promote consistency and uniformity in communications among the ICLN member networks and key stakeholders during execution of a joint response. The SOP is refined via evaluation, periodic exercises that mimic a large-scale contamination incident or through real-life incidents such as response to the COVID-19 pandemic. Another key resource developed and maintained by the ICLN is a database of the laboratories that are members of each of the ICLN networks. Each of these components of the ICLN preparedness posture is described below.

ICLN Web Portal

The ICLN Portal is a secure, password-protected web portal used by member networks routinely, during an exercise, or, most importantly, during an incident response. The portal, located at icln.org, hosts the ICLN's guidance documents and serves as a common resource location for members of the NCG, the technical subgroups, and others requiring access to a collaboration workspace for activities within scope of the ICLN. The home page also includes a publicly accessible area where several guidance documents, recorded webinars, and other resources are available for public review and download.

During joint response incidents, the password-protected side of the portal serves as a common nexus to facilitate communication and coordination among participating member networks. The portal serves as a secure, online incident command center for the arrangement and conduct of meetings, including webinars, sending and receiving alerts, emails, and situation reports, and saving miscellaneous documents of importance to a given response. All communications through the portal are saved and archived and can serve as a historical record of the analytical response activities.

Data Exchange Utility

Creation and refinement of the DEU was a critical step to ensuring the capability to provide surge analytical capacity to a network overwhelmed by large numbers of samples. Hosted on the ICLN Portal, the DEU is an information technology infrastructure that supports aggregation and exchange of laboratory results data in a common format. Residing on the password-protected side of the ICLN Portal, the DEU transforms data presented by networks in their own "native" format into a common ICLN data format. This common ICLN format, referred to as the MDE, resulted from extensive engagement among member network representatives to develop a format that accommodates needed mandatory and optional attributes associated with chemical, biological, and radiological samples from all types of matrices (including human clinical, environmental, food, plant, and animal clinical samples). The DEU permits users to search aggregated data using various search parameters and facilitates download of the data to a member network's system for further processing in the course of resolving an incident. Data

relating to a given incident are maintained and archived on the ICLN Portal server for as long as it is required by the primary network. The DEU was first implemented as an operational utility in 2012 and is periodically updated to simplify and streamline processes, incorporate improvements in data management, and accommodate the various networks' periodic changes in their native data formats.

Sharing of data among networks during an incident is governed by a formal document known as an Incident-Specific Data Sharing Agreement (ISDSA), which describes in detail the following attributes that contribute to the protection and security of data: which network is primary for response and which networks are providing support, what data parameters are required by the primary network, the intended purpose of the data, how aggregated data is shared and used, how accuracy of data is validated, which networks have permission to access and distribute the data, and how long data is retained once an incident is resolved. Direction and agreement on sample attributes to be reported along with the data are critical to ensure data associated with all samples are meaningful and interpretable in context of a specific response challenge.

During the reporting period, ICLN substantially revised data attributes incorporated in the MDE format to meet member networks' current needs and undertook the remapping of networks' native data formats to the MDE format to effect smooth transformation of network data into the ICLN environment. The DEU architecture was also revamped and is currently in beta testing.

Standard Operating Procedure for Incident Response

The ICLN established and regularly refines the ICLN NCG SOP for Incident Response to promote smooth execution of the relatively complicated series of actions that characterize an effective response by multiple agencies. The current version of the ICLN SOP was finalized in 2022. This SOP is implemented by the ICLN NCG upon a notification by any member network that joint action is currently required, or may be required in the near future, to resolve a significant CBRN contamination or disease incident. The SOP guides NCG representatives through use of available through the ICLN Portal. While primary portal is accessible by NCG and other Federal Government laboratory network representatives, external experts can access the portal with limited permissions and for limited duration, to provide unique technical perspectives on an evolving incident.

The SOP outlines procedures required during incident response. These procedures include using the ICLN Portal for communication and coordination; developing and sending alerts and situation reports; identifying and negotiating resources available to support the response; agreeing on methods used and reporting and releasing of data among networks; and demobilizing resources and preparing an After-Action Report at the conclusion of incident response.

The SOP also includes emergency contact information for each ICLN member network representative as well as the specific templates for documents to be used during incident response, as outlined in the procedures. These documents ensure consistency in response, sample analysis, data transfer, and after-action reporting.

Exercises

A critical component of ICLN success in incident response management is communication before and during events. The ICLN works in this area to build relationships necessary to support effective laboratory response. Ongoing exercises and efforts to measure sample throughput help identify room for growth and focal areas for improvement. The ICLN uses three exercise types that are more in depth than the standard Homeland Security Exercise and Evaluation Program exercise types. These include virtual tabletop exercises (TTX), periodic portal drills, and interagency collaborations. To improve use of the ICLN coordination tools by all NCG representatives, a program of periodic drills focuses on completing specific tasks on the ICLN Portal (see Table 1).

Table 1. Periodic Portal Drills (October 2020 – September 2022)

- DEU Data Upload Training for the Mixed Agent TTX.
- Complete and upload the Incident Closeout Form (pdf. version).
- Send Preparedness Alert via mobile device.
- Update user profile on the ICLN Portal via mobile device.
- Send email from the ICLN Portal via mobile device.
- Test the discussion feature on the ICLN Portal.
- Test the activity feed feature on the ICLN Portal.
- Create an online meeting using Zoom.gov.
- Review and update Network Operational diagrams.
- Identify network policies and procedures to request ICLN resources.
- Update the ICLN Portal profile (email and phone number).
- Send a Preparedness Alert from the ICLN General Incident.

Virtual TTXs are conducted over several days approximately once per year. Since 2008, the ICLN conducted 20 virtual TTX exercises that spanned scenarios involving chemical, biological, and radiological agent contamination of environment and food matrices primarily, and in animals and plants (see Figure 2). Conduct of a TTX generally involves only a subset of seven ICLN member networks. In this extensive set of scenarios, all networks participate in the role of both a lead response network and a supporting response network assisting a lead network. These exercises enhance understanding of ICLN SOP procedures and network capabilities and limitations. The TTXs provide the NCG with a better sense of needed changes to key ICLN infrastructure such as the ICLN Portal, the ICLN NCG SOP, and other guidance documents. These exercises improve knowledge of network/agency responsibilities and capabilities, enhance overall execution of laboratory incident response processes, and increase the use and quality of communications through the ICLN Portal.

Exercises in all forms constitute an essential element in maintaining ICLN readiness and promoting refinement of tools and procedures. Each exercise leads to further understanding of areas that might limit network interoperability. Lessons learned during these exercises lead to

improved communication among NCG members, enhanced use of the ICLN Portal tools, and better maneuverability within the portal environment.

During the reporting period, ICLN planned and conducted a tabletop exercise built around a scenario involving wide-area simultaneous release of both a radiological agent and an infectious disease agent. The TTX was held in June 2022. The ICLN NCG also participated in providing interagency collaboration during the COVID-19 public health emergency.

Previous ICLN Tabletop Exercises & Interagency Activities

TABLETOP EXERCISES (TTXs):

- B. anthracis (December 2008)
- Melamine in macaroni product (December 2008)
- H5N1 (2009)
- B. anthracis inhalation (IBRD, July 2010)
- B. anthracis inhalation (October 2010)
- C. botulinum in food (October 2010)
- Sodium fluoroacetate in food (October 2010)
- Foot and Mouth Disease (March 2011)
- Rathyibacter Toxicus (September 2011)
- Rad TTX: 3 RDD (Denver, Chicago, Los Angeles) using Strontium-90 and Plutonium-238 (February 2012)
- Chemical-in-Milk/ChemR2 (August 2012)
- Foot and Mouth Disease in Milk (May 2013)
- Radiological IND (July 2013)
- Anthrax Validation (April 2014)
- Cyclosarin (September 2014)
- Nuclear Power Plant (June 2015)
- Sodium Fluoroacetate (December 2015)

TABLETOP EXERCISES (TTXs), continued:

- Cyanide/Ethyl Parathion/Strontium-90 Mixed Agent (September 2017)
- Opioid (September 2018)
- Americium-241/ Highly pathogenic avian influenza A (H5N1) Mixed Agent (June 2022)

INTERAGENCY ACTIVITIES:

- Northern Lights (October 2016)
- COVID-19 multi-agency incident (2020-2021)

Figure 2. ICLN Exercises and Interagency Collaborations

Member Network Laboratories Database

Provision of analytical services to resolve samples and provide data occurs at the individual laboratory level. Some 450 individual laboratories across seven ICLN member networks constitute the analytical power available to the ICLN in a joint response action. These laboratories have daily work routines that substantiate their existence. When an ICLN member network is called upon to provide service in responding to a CBRN or public health incident, the network considers several of factors in identifying and negotiating a network member laboratory's participation. Such factors include current standing on proficiency assessments, proximity to the location of the incident, potential sample throughput capability, and ongoing obligations of the laboratory. Additionally, several laboratories are members of multiple ICLN member networks.

The NCG determined that a database of all the network laboratories in the ICLN, along with their general capabilities, is important in identifying analytical resources available based on each type of response scenario (CBRN). The NCG created and periodically updates this database to ensure it is as current as possible. This database was most recently updated in 2021, during the current reporting period.

Building Relationships to Support a More Effective and Integrated Response During Emergencies

From its inception, the ICLN recognized the significant value of successful integrated response across multiple agencies. To this end, the NCG met monthly since 2005. Even during the unfunded period between February 2019 to March 2020, the ICLN NCG members still met 11 times on a volunteer basis. Annually, the ICLN NCG meets with the Joint Leadership Council (JLC) to present progress updates and discuss strategic direction, policy, and initiatives. The JLC most recently met with the NCG in May 2021. At each of these meetings, the leadership of ICLN participant agencies as represented on the JLC have noted the remarkable success of the ICLN in maintaining its viability and increasing maturation across more than a decade and a half of existence. As of this report, all original members of the NCG, technical subgroup leaders, and JLC senior policy members has changed, and the ICLN continues as a viable interagency organization, suggesting that it is an essential element of the fabric of member agencies.

The MOA that codifies the existence of the ICLN was first created and signed in 2005 and updated in 2012 and 2016. The process of updating the MOA contributes not only to the formal establishment of the relationship that is the ICLN, but also reflects on the value of the ICLN relationship and the commitment each agency and member network brings to the relationship.

The 2016 update of the ICLN MOA incorporated the agreement among agencies to share data in emergency situations, the essential element of agreement that makes the ICLN viable as a functional integrating response entity. The ISDSA establishes the framework for transfer, proper management, ownership, and uses of data that member networks convey during an emergency response. It was developed over numerous discussions and refined through the relationship-enabling environment of the series of TTX and other joint activities.

The JLC's May 2021 observation that the ICLN response role is broader than its original CBRN-focused response mission is reflected in the current 2023 draft ICLN MOA, including the term "emerging disease threats" as part of its scope. Additional observations made by the JLC at its most recent meeting include:

- An analysis of what the ICLN is and can be, should be undertaken to clarify gaps and solidify objectives to fulfil the ICLN's fully established role in response.
- The ICLN should ensure it is fully integrated with and recognized by other agencies having roles in response. An example was to ensure the ICLN is properly recognized in guidance documents developed under the auspices of the National Response Framework (such as Emergency Support Functions and Incident Response Annexes).
- The ICLN should conduct regular exercises to grow its integration, familiarity, and ease of execution in its target capabilities.

Other activities have contributed to the strength of the ICLN relationship. It was recognized early on that networks must feel confident in the ability of laboratory members of other networks to competently perform analyses with methods and matrices they may not use on a regular basis (e.g., an analytical method provided by a lead network in an incident response to a network providing support during that response). The ICLN conducted several laboratory-based exercises called Internetwork Laboratory Coordination Exercises (ILCE) (formerly known as Confidence-Building Competency Tests) to promote confidence in laboratory network performance during cross-network actions.

The ICLN ILCEs are developed to assess specific aspects of interoperability of laboratory networks regarding the provision of agent detection and surge support to each other during a large-scale event. Specific aspects of interoperability explored as part of an ICLE include the ability to perform a nonroutine method at an acceptable level of quality and the ability to combine information from several networks using prescribed data communication procedures. The ICLE is explicitly not intended as an exploration or demonstration of proficiency in a method, nor is it intended to indicate a quantitative expansion of capacity through sharing of samples across ICLN networks. These more rigorous examinations require more expansive tests involving much larger numbers of samples and participating laboratories.

Study observations indicate proficient laboratory analysts demonstrated competence at performing methods they do not typically perform in their everyday jobs. Accordingly, networks are more comfortable depending on other networks for analytical support when they are overwhelmed with samples from a large incident.

During this reporting period, the ICLN undertook significant steps to promote confidence in analytical capabilities across the member networks:

- The document *Recommendations for Conducting Proficiency/Performance Testing (PT) Programs of the Integrated Consortium of Laboratory Networks,* completed in November 2021, provides more robust guidance on how PT programs are structured and executed along with guidance on producing an appropriate response to less-than-passing evaluation for participant labs.
- Member networks also provided descriptions of their PT programs for aggregation and awareness across the ICLN and committed to providing information on specific PTs, both from the recent past and planned near future, via the PT registry of the ICLN Portal.
- A more robust network guide to ICLN ILCE was developed in FY 2022 to clarify the step-by-step procedures in planning, executing, and reporting an ILCE.

With the new ILCE guidance in hand, the ICLN committed to conducting an ILCE in FY 2023.

The ICLN and its member networks recognized the importance of seeking visibility with the approximately 450 laboratories that provide analytical capacity potentially available through the ICLN member networks. The member networks convene periodic conferences among their membership and frequently invite managers of other networks, including the DHS NCG Chair, to make presentations or participate in panels before their constituencies in attendance. These

activities help laboratory managers and practitioners to understand the organizational framework to which all contribute to a joint response coordinated through the ICLN. To ensure further understanding of the ICLN, an "Ask ICLN" link is included on the ICLN's public web page (icln.org) that allows the public to ask a question of the ICLN leadership and the ICLN network membership.

Finally, a key element of any organization is to undertake a periodic examination and adjustment of its strategy for the future. Strategic planning is an essential element of the maturation of the ICLN, having conducted major strategic planning meetings in 2007, 2012, and 2015. In each of these face-to-face encounters among all NCG representatives and subgroup leaders, relationships solidified as future objectives were considered and prioritized. The next major strategic planning meeting is included as a projected activity for the next fiscal year.

ICLN Accomplishments During This Reporting Period (September 1, 2020–September 30, 2022)

The ICLN Integrated Response Architecture incorporates the following five strategic goals:

Goal 1: Strengthening ICLN incident response capabilities.

Goal 2: Strengthening ICLN technical capability and/or capacity.

Goal 3: Improving and expanding ICLN exercises and participation in these exercises.

Goal 4: Developing and building outreach for the ICLN.

Goal 5: Addressing current topics of interest (e.g., COVID-19, improving coordination of equipment purchases).

During the period of September 1, 2020, through September 31, 2022, the following accomplishments occurred in each specific ICLN goal category:

Goal 1 Accomplishments: Strengthening ICLN incident response capabilities

- Initiated review and update of the Responsible Federal Agency (RFA) matrix. The RFA matrix identifies the government agency (at the Cabinet level) principally responsible for response and recovery activities for the types of agents (chemical, biological, radiological) across the various target domains of relevance to ICLN scope (humans, plants, animals, environmental, food).
- Collected into a single chart authority that stimulated establishment and maintenance of the ICLN and member networks. Such authorities are categorized as statute, agency policy, Presidential directive, interagency agreement, and incident annexes to federal interagency operational plans. This chart was added as an addendum to the RFA matrix.
- Updated and documented network operational response diagrams for all networks. Creates understanding of internal operations of each member network during an incident response.
- As needed, updated the emergency contacts list which provides names and contact information for individuals of significance within each network and the NCG. This update

occurred each time network information changed (e.g., retirements, new hires, staff rotations, etc.).

- Initiated the process of updating the ICLN MOA to replace the 2016 agreement. Expanded scope to include "emerging disease threats," reflecting significance of disease outbreaks to national security of the Nation.
- Updated the overlapping lab list, which is a full roster of ICLN network lab members, and their agent/matrix capabilities, comprising some 450 labs. The list also includes designations of their respective, sometimes multiple, network affiliations.
- Updated the ICLN Portal to include new utilities, enhancing communication and coordination among NCG networks and workgroups.
- Scheduled ICLN Portal training for new members, as necessary.
- Initiated a review and update of the ICLN Situation Report format. The Situation Report is a standardized means for networks to communicate via the ICLN Portal on the status of an incident that requires a joint response.
- Refined the ICLN Portal's DEU. The DEU provides ICLN member networks the mechanism by which data can be converted from its native format into a single common unified format for aggregation and further analysis in support of a major public health incident.
- Combined Registry (CR) is a database comprising three fundamental elements: methods of all member networks for all agents relevant to the broad ICLN domain, proficiency testing events conducted by the member networks, and training opportunities relevant to ICLN member networks.
- Reformulation of the DEU and the CR was necessary to correct deficiencies and improve performance of the ICLN Portal.

Goal 2: Strengthening ICLN technical capability and/or capacity

- By way of the Interlaboratory Comparability/Quality Assurance (IC/QA) Subgroup:
  - o Developed and documented new guidance for ICLN networks in the conduct of performance testing programs.
  - o Completed the collection and assembly, for the first time, of information describing the performance testing programs currently executed by ICLN member networks.
- Through the Methods/Detection Technology Subgroup:
  - o Revised and updated three key guidance documents:
    - ▪ *ICLN Guidelines for Comparison of Validation Levels Between Networks*
    - ▪ *ICLN Sample Chain of Custody Form*
    - ▪ *ICLN Sample Collection and Handling Guidelines*
  - o Added methods for SARS-COV-2, influenza A and B, and abrin (a biotoxin) to the ICLN Portal's Methods Registry.
- Through the Radiological Laboratory Subgroup:
  - o Developed a list of some 60 references on gamma spectroscopy and leveraged a professional body of radiochemists to identify among them the references of greatest value to new practitioners in the radioanalytical field.
  - o Surveyed previously executed radiological exercises having an analytical component to review gaps and lessons learned that could inform future subgroup work activities.
  - o Completed a document entitled *Unique Resources of Radiological Laboratories for Emergency Response from Laboratory Managers Perspective*. This document

informs perspectives on resources necessary for effective response to radiological emergencies.

- Completed the COVID-19 Lessons-Learned and the MDE short-term workgroups.
  - o COVID-19 Lessons-Learned Workgroup:
    - ▪ Established in October 2020 to identify information, personnel, materiel, and other factors that impacted response capability by members of the ICLN NCG.
    - ▪ Participants in the ICLN COVID-19 Lessons-Learned Workgroup submitted, reviewed, summarized, and ranked gaps and lessons learned. Products from the workgroup include the *ICLN COVID-19 Lessons-Learned Workgroup Recommendations* document.
    - ▪ Gaps and lessons learned were identified in the following areas:
      - ➢ Shortages: Laboratory supplies and verification of quality goods/counterfeit supplies
      - ➢ Data and communication: Integrated system and format to report data and communicate results and public health emergency-related communication among networks
      - ➢ Certifications/authorizations: Clinical laboratory improvement amendments certifications/regulatory compliance
      - ➢ Emergency use authorizations
      - ➢ Staff considerations: Testing, contact tracing, and travel
    - ▪ The primary outcome identified from this workgroup was the need for the establishment of a national laboratory supply stockpile.
  - o MDE Workgroup:
    - ▪ Formed to reconfigure the ICLN unified data format with new or revised data elements and definitions to better correlate with data formats currently in use by ICLN member networks.
    - ▪ Initiated the mapping of member network native data formats to the updated ICLN MDE format produced in FY22 by the MDE Workgroup. The MDE is the common format to which all member network data is converted to facilitate data sharing across networks operating in a joint analytical response. This conversion occurs in the DEU of the ICLN Portal.

Goal 3: Improving and expanding ICLN exercises and participation in these exercises

- Conducted a drill requiring that all NCG members create a preparedness alert, exercising a procedure outlined in the ICLN SOP which facilitates communication of an impending potential joint response incident.
- Initiated an effort to document processes within each network needed to request assistance through the ICLN from other networks in the event of an incident that overwhelms the primary network's capacity or capability. Creates understanding of internal operations of member networks and strengthens incident response capabilities.

- Coordinated and facilitated the planning for an ICLN mixed agent tabletop exercise that was conducted in FY22. The exercise involved a dual agent (biological and radiological) terrorist attack.
- The IC/QA Subgroup developed and documented a new guidance document, *The ICLN Internetwork Laboratory Coordination Exercises (ILCE) Guide,* incorporating lessons learned from the execution of previous ILCEs. ILCEs exercise the ability of network labs to perform an analysis they do not routinely perform, an important element of promoting confidence in networks to provide analytical support to other networks in an incident involving large numbers of samples.
- Committed to the conduct of an ILCE in FY23.

Goal 4: Developing and building outreach for the ICLN

- Hosted a briefing by the Head, Diagnostic Services Division, at the Foreign Animal Diseases (FAD) Laboratory to inform NCG on U.S. capabilities in FAD diagnostics.
- Initiated discussions with the CDC Influenza Network regarding integration with the ICLN and identified additional federal laboratory systems that may potentially have symbiotic relationships with the ICLN.
- Brainstormed on the design for an Analytical Laboratory Community of Interest which would provide ICLN-like resources and support to state and local partners.
- Submitted the final biennial report to Congress on the status of the ICLN. This report was completed and submitted to Congress in July 2021. It is required under the Food and Safety Modernization Act of 2011. The July 2021 report covered the period between November 2017 and August 2020 and outlined progress of the ICLN as well as statements of objectives for the future. This report satisfied the FSMA biennial reporting requirement and addressed the goal of building outreach for the ICLN.
- The ICLN Program Office published seven quarterly newsletters highlighting ICLN network capabilities and successes. These newsletters are available to the general public on the icln.org website. Table 2 lists newsletter topics.

Table 2. ICLN Newsletter Topics
(All newsletters are available in PDF format at icln.org)

Volume 1, Issue 1 (November 2020)
- Coordinated Lab Response for Chemical, Biological, Radiological, or Nuclear Incidents
- ICLN Organizational Chart
- Seven Federal Laboratory Networks Make Up the ICLN
- Tools and Resources of the ICLN
- The Integrated Response: The ICLN regularly conducts exercises to evaluate and improve response operations.

Volume 1, Issue 2 (March 2021)
- NAHLN Spotlight: Using the ICLN Veterinary Network to Analyze Human SARS-CoV-2 Samples
- Overview of the ICLN COVID-19 Lessons-Learned Workgroup
- Previous ICLN Tabletop Exercises and Interagency Activities

Volume 1, Issue 3 (July 2021)
- ICLN Portal/DEU Overview
- One Health Spotlight: Federal Interagency COVID-19 Coordination Group
- Overview of the ICLN Radiological Laboratory Subgroup

Volume 1, Issue 4 (December 2021)
- An icln.org Website Overview
- Vet-LIRN Spotlight: Vet-LIRN's Role in COVID-19 Emergency Response
- IC/QA Subgroup Update

Volume 2, Issue 1 (June 2022)
- Overview of the Upcoming ICLN BioRad Mixed Agent Tabletop Exercise
- EPA Analytical Spotlight: Development of a Rapid Viability RT-PCR (RV-RT-PCR) Method to Detect Infectious SARS-CoV-2 from Swabs
- LRN-C Spotlight: Laboratory Response Network for Chemical Threats (LRN-C) in Action

Volume 2, Issue 2 (August 2022)
- Mission and Outcomes from the COVID-19 Lessons-Learned Workgroup
- The icln.org Website – Radiological Webinars Offered
- ICLN Methods Subgroup Update

Goal 5: Addressing current topics of interest (e.g., COVID-19, improving coordination of equipment purchases)

- The ICLN maintained awareness of multiple health-related outbreaks during the year through regular reporting at NCG meetings. Incidents included the continuing COVID-19 public health emergency and outbreaks of highly pathogenic avian influenza and mpox in the United States, and the outbreak of Ebola virus disease in Africa.

- NCG members also provided updates on responses to chemical and radiological contamination as well as food adulteration.
- Maintained awareness of COVID-related experiences among the ICLN member networks and agencies through regular reporting at NCG meetings throughout the year. Shared numerous articles and COVID-19 testing resources, emergency use authorizations, and the status of the public health emergency.

Activities that support all ICLN goals:

- Reviewed and revised ICLN goals outlined in the ICLN Response Architecture document.
- Initiated and completed a draft ICLN white paper outlining background, purpose, and scope of the ICLN as well as analysis of gaps and linkage to future objectives.
- Commenced the process of updating the ICLN MOA to replace the 2016 agreement. Expanded the scope to include "emerging disease threats," reflecting the significance of disease outbreaks to the security of the Nation.
- Convened the monthly NCG meeting on the third Wednesday of each month. During the September 1, 2020, through September 31, 2022, timeframe, the ICLN NCG met 25 times.
- Organized the annual JLC meeting, which typically occurs once per year.

Path Forward for the ICLN

Informed by feedback from the ICLN member networks during monthly NCG meetings as well as lessons learned from the COVID-19 public health emergency response, the ICLN leadership, subject to the approval and support of the JLC and availability of budgetary resources, intends to evolve the program in the following directions:

- Continue work to promote the incorporation of the ICLN into the overall federal incident response landscape.
- Continue to enhance the incident management workspace/tools on the ICLN Portal, including the successful functionality of the improved DEU.
- Create a Radiological Laboratory Hub on the icln.org external portal.
- Perform more live sample exercises and/or an Internetwork Laboratory Coordination Exercise.
- Develop an exploratory plan to create a Strategic National Laboratory Supply Stockpile, in coordination with HHS and the Strategic National Stockpile program.
- Initiate activities for the creation of an Analytical Laboratory Community of Interest for non-federal analytical laboratories, including but not limited to state, local, tribal, territorial, medical, and university laboratories. This is intended to provide collaborative, communication, and data aggregation tools similar to the ICLN Portal but more widely accessible.

Conclusion

"The focus of the ICLN is to create a U.S. homeland security infrastructure with a coordinated and integrated operational system of laboratory networks that provide timely, high-quality, and interpretable results for early detection and effective consequence management of acts of terrorism and other events requiring an integrated laboratory response." (excerpted from the initial ICLN MOA, June 2005).

The purpose of the ICLN is to:

- Work cooperatively to optimize national laboratory capability within federally managed networks by improving coordination of laboratory response to incidents.
- Promote common standards of performance across all federal laboratory network response assets to ensure data supporting homeland security decisions is of the best quality and defensible.
- Assess and fill gaps in coverage (capability and capacity) across multiple sample types, potential impacted groups (human, animal, plant, environment), CBRN and public health incidents, all weapons of mass destruction, and all response phases.
- Enhance laboratory data interoperability.

The ICLN has effectively maintained its focus and fulfilled its purpose since its inception in 2005. It brought together nine federal agencies and seven federal laboratory networks to effectively share resources during preparedness and response activities that required a collaborative laboratory effort. Despite being unfunded between February 2019 and April 2020, DHS revitalized the ICLN Program in April 2020. Since this re-establishment, the ICLN has organized important and vital collaborations related to COVID-19 testing and the public health emergency response, as well as implemented numerous communication, coordination, and interoperability capabilities. New goals have been added to the ICLN mission, and interagency attendance and participation at monthly NCG meetings and subgroup meetings continues to be strong. Most importantly, program tools such as the ICLN Portal was reactivated and upgraded to become a recognized critical national response asset that is well utilized in both routine and non-routine activities, demonstrating the long-term viability and importance of this collaborative network.