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The Integrated Consortium of Laboratory Networks Newsletter

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The Integrated Consortium of Laboratory Networks (ICLN) is a system of interconnected federal laboratory networks that can quickly respond to high-consequence incidents and give decision makers timely, credible, and interpretable data.

ICLN BioRad2 Live Sample Exercise Nearing Conclusion

The ICLN conducted a tabletop exercise (TTX) in June 2022 focused on a scenario involving simultaneous wide area release of biological and radiological agents. All goals were met during this exercise with the exception of outlining the flow of samples through the laboratory systems. Due to the likely presence of both agents in most samples, the planning team was challenged to project how individual laboratories would approach the handling and analysis of potentially dual-agent samples.

In order to address this question, the ICLN conceived a live sample exercise follow-on to the TTX which would serve as a conduit for the experts in addressing such samples: the analytical labs themselves. Samples being prepared and shipped to the labs will be non-hazardous surrogates for the agents employed in the TTX scenario.

Twelve labs across the Environmental Response Lab Network (ERLN), the Food Emergency Response Network (FERN), and the National Animal Health Lab Network (NAHLN) have agreed to participate in the exercise. Biological and radiological samples are being prepped, respectively, by the Illinois Institute for Technology Institute for Food Safety and Health Moffett Center and the EPA National Analytical Radiation Environmental Lab (NAREL). CDC Radiological Laboratory has already prepared blind samples of uranium in urine and has had the CDC Elemental Lab analyze them as a mimic of the clinical surveillance for contamination/exposure of humans.

The exercise comprises two elements: (1) Although the challenge samples actually contain a single analyte, the labs are asked to envision the samples as potentially containing both their target analyte and the confounding dual agent, and to document how they would approach the handling and analysis of such samples. The ICLN planning team will then aggregate these approaches into a coherent best-practices procedure. (2) The labs will analyze the samples and upload their results to their sponsoring network's data system. Networks will then upload their results for aggregation in the ICLN Portal's Data Exchange Utility, exercising that key element of ICLN functionality.

Sample shipment and analysis are planned for the end of January 2023, bringing to a culmination several months of planning and coordination. This investment of time has already paid strong dividends toward defining a process to effectively conduct live sample exercises. These dividends will be productively invested in the planning and execution of an ICLN Internetwork Laboratory Coordination Exercise (ILCE) in 2023. More about this ILCE will be provided in a future article!

Samples mimic primarily either environmental swabs or environmental water samples. Samples are of three types:

- The biological samples consist of *inactivated* SARS-COV-2 virus on swabs in Primestore transport medium or in water.
- The radiological samples for the exercise consist of natural uranium in water at permissible drinking water concentrations.
- A set of samples consisting of brain heart infusion (BHI) broth is employed as a stand-in for surface samples acquired at an agricultural facility.

NETWORK SPOTLIGHT:

EPA's Water Laboratory Alliance: Strengthening Preparedness by Supporting Analytical Full-Scale Exercises

An Analytical Preparedness Full-Scale Exercise (AP-FSE) is an operational-based exercise in which activities, including actual sample analyses, are performed in real-time in response to a fictitious water contamination scenario. The AP-FSE allows utilities, laboratories, and other partners to practice and test their emergency response plans and personnel needed to coordinate analytical support during a water contamination incident. Compared to tabletop exercises, full-scale exercises require significantly more planning and resources. EPA's Water Laboratory Alliance (WLA) created an [AP-FSE toolkit](#) to alleviate this burden and help the water sector conduct exercises pertaining to water contamination incidents. The toolkit includes example scenarios and exercise documentation that can be used as-is or updated to build a customized exercise.

To further assist the Water Sector, in 2022, WLA expanded its technical support by launching an AP-FSE cohort of multiple organizations collaborating in the planning and conducting their own full-scale exercise using the AP-FSE toolkit.

The "cohort" approach was proven to be beneficial in:

- Allowing participants in different exercises to discuss/ share different perspectives related to planning.
- Providing means to collaborate with others on exercise planning.
- Allowing expertise to be shared with different organizations based on role and responsibility.
- Allowing cohort members to provide and receive encouragement and feedback on action items and timelines.

The first cohort was conducted in collaboration with EPA's National Analytical Radiation Environmental Laboratory (NAREL) and EPA Region 1. The participating organizations for this first cohort were the Massachusetts Water Resources Authority (Utility-Led Exercise, June 2022) and the Virginia Division of Consolidated Lab Services (State Lab-Led Exercise, July 2022). The hypothetical water contamination scenario involved a radiological (Strontium-90) incident, which each organization modified and tailored to fit their organization's specific needs and goals. As a result, the cohort was able to move along the planning process together and share best practices and lessons learned along the way. Some of the outcomes of the exercise included:

- Providing an opportunity for new analysts to meet more experienced analysts that can serve as future technical resources, which will help address knowledge gaps,
- Educating utilities in various states on EPA and state resources that are available for these types of incidents, and
- Identifying communication as an area for improvement and consequently establishing a list of possible solutions to identified communication challenges.

WLA stresses "a disaster is NOT the time to exchange business cards"; with that in mind, WLA will continue to create opportunities for the water sector to network

and improve communications with response partners. WLA will soon kick off a second AP-FSE cohort for 2023. To learn more about this effort, please contact WLA@epa.gov.



ICLN Explores Potential for a National Laboratory Supply Stockpile

During the first year of the COVID-19 pandemic, the ICLN established the COVID-19 Lessons-Learned Working Group ('the Workgroup') to conduct an assessment of, and identify potential resolutions to, challenges experienced across the ICLN network membership as a result of the pandemic. (See [ICLN Newsletter, Vol 2, Issue 2, Aug 2022](#).) Among some five categories of challenges identified in the study, the shortage of items routinely used in analytical laboratories was identified by the Workgroup for highest priority resolution.

A survey across the ICLN member networks resulted in the compilation of a large number of items affected by pandemic-induced supply chain disruptions. These items span the spectrum of use in laboratory pre-analytic through post-analytic processes, including personal protective equipment, consumable analytical supplies, detection kits, chemicals, and soaps. The Workgroup formulated a list of such reagents and supplies and approximate quantity requirements for a limited duration reserve supply, along with justifications, to support the vision of a "national laboratory supply stockpile."

The ICLN is exploring pathways to create such a stockpile to mitigate future supply chain limitations. One alternative is to seek to influence the Strategic National Stockpile (SNS) to incorporate the reagents and supplies proposed for the ICLN laboratory stockpile. Inclusion of this initiative into the SNS would require an expansion of the SNS scope, which is centered on medical response to emergencies and is intended to support state/local/tribal/territorial needs, but generally excludes distribution of resources to federal entities, including federal laboratories.

An identified alternative pathway is for the ICLN to create and maintain its own national laboratory supply stockpile, enabling optimization specifically for ICLN-participating networks and their member laboratories. The vision includes using the COVID-19 workgroup's initial list of shortage items as a base inventory for the stockpile. Resources to support this inventory are to be determined, but ideally would be part of ICLN's operating budget. Items nearing expiration could be made available for lab use, eliminating waste, and partially exercising the distribution system. If this option is selected, the stockpile could also potentially be integrated into the existing DHS medical countermeasures storage and distribution system.

Watch this Newsletter for updates on this evolving effort.



Centers for Disease Control and Prevention (CDC) scientist conducting molecular testing.