February 29, 2024

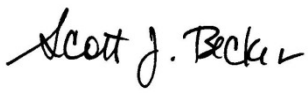
Dear Public Health Laboratory Directors:
APHL is pleased to provide a guidance tool to assist you in responding to the "***Epidemiology and Laboratory Capacity for Prevention and Control of Emerging Infectious Diseases (ELC)***" notice of funding opportunity (NOFO) (CDC-RFA-CK-24-0002), which was released on February 14, 2024. The NOFO solicits applications for Budget Period 1 (August 1, 2024-July 31, 2025). The application must be submitted by April 30, 2024**.**

Your responses should include requests for projects that are cross-cutting (non-categorical) ELC projects (Section 1), emerging infectious disease programs (Section 2) and disease specific projects (Section 3).

APHL encourages our members to be highly involved in the ELC application writing process. Laboratory Directors and appropriate technical staff should contribute to the relevant sections of the proposal. Laboratory Directors are asked to share this guidance with appropriate technical staff. Once the application process is complete, summary comments and the budget markups will be sent to the ELC Governance Team members in each state/jurisdiction. If you are not the laboratory representative on the ELC Governance Team, please ensure that your laboratory representative shares this information with you.

If you need assistance, please feel free to contact the APHL staff below.

Sincerely,



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General Highlights

- *As you develop work plans and budgets, APHL suggests that your budgets reflect your laboratory's "true needs" related to funding required to implement ELC requirements. While the NOFO, includes estimated award amounts for each ELC section, it is still helpful to provide full budget requests.*
- *As you consider your need to update extraction and molecular testing platforms and consult this table for information on which platforms are sunsetting and which CDC assays have been cleared or evaluated on various models.*
- *CDC continues to evaluate platforms to replace the ABI 7500 Dx which as of December 2022 is no longer being sold. The ABI 7500fastDx will continue to be supported through 2029. Refer to this summary report for information on platforms under consideration.*
- *APHL maintains a list of manufacturer discounts for public health on our website: Public Health Pricing List. Please note only APHL members can access this list.*
- *Health Equity is highlighted throughout the NOFO. Consider demonstrating how you will work to improve equity when building surveillance networks and provide access to testing.*

Section 1: Cross-cutting Emerging Infectious Disease Capacity, Systems and Leadership

(Guidance includes only sections relevant to the laboratory)

Program A: Cross-cutting Epidemiology and Laboratory Capacity (p. 50-58)

65 awards; average of $369,000 per award

Area A: Surveillance, Detection, and Response

1) Enhance Workforce Capacity
   - *Consider your laboratory's training needs and request support through the peer-to-peer visit activity to facilitate those trainings.*

2) Enhance investigation and outbreak response

   - *Consider the costs associated with setting up or supporting an existing courier system for the transport of ELC-funded organisms.*
   - *Consider costs associated with packaging and shipping surveillance specimens to CDC.*

4) Strengthen laboratory testing for surveillance, detection, preparedness, and response

   - ***Implement, sustain or enhance testing to support infectious disease surveillance or outbreak response.*** *When developing these activities consider the following:*
     - *Prioritize staff that perform infectious disease testing across ELC funded areas.*
     - *Consider your need to purchase new thermocyclers in the coming years as the ABI 7500fastDx will no longer be supported by ThermoFisher in 2029.*
     - *Consider establishing partnerships with clinical and commercial laboratories to develop or enhance cross-cutting specimen and data sharing networks to enhance and create efficiencies*

amongst existing surveillance activities. Especially consider the benefit for influenza and other respiratory pathogens, antimicrobial resistant isolates, culture independent diagnostic tests, and foodborne specimens/ isolates. Consider including activities that will enhance partnership for multiple pathogens. This can also be included in Strategy 10.

- *Consider your need for general laboratory supplies such as packaging and shipping containers (plus shipping costs), viral transport media, culture media, PPE (including N-95s), commercial PCR reagents, nucleic acid extraction chemistries, pipettes/pipet tips.*
- *Consider your need to update extraction platforms and consult this table for information on which platforms are sun-setting and which CDC assays have been cleared or evaluated on various models.*
- *APHL maintains a list of manufacturer discounts for public health on our website: Public Health Pricing List.*

5) Improve efficiency of laboratory operations

- *This year's NOFO includes a new required activity: "Conduct a gap analysis for at least one cross-cutting laboratory process or subject area (e.g., accessioning, equipment maintenance, inventory management) to identify inefficiencies." APHL will work with the ELC program office to provide additional suggested approaches or gap analysis tools that could be used.*

10) Improve coordination and outreach among laboratory partners

- *For the "laboratory landscape analysis" consider leveraging existing information gathered from similar efforts (e.g. LRN sentinel lab outreach), limiting the landscape to only a few of the largest laboratories in your region and/or utilizing APHL's PHL Systems Database to identify potential testing partners in neighboring jurisdictions.*
- *APHL will work with the ELC program office in the coming months to suggest reasonable approaches. Consider requesting funds for a small amount of staff time to conduct the assessment.*

Project B: ELC Leadership, Management, and Administration (p. 59-64)

43 awards; average of $125,953 per award

Consider requesting funds to support a Lab-Epi Connector (an epi liaison) that is housed at your laboratory. This person would enhance and help support ongoing communication between lab and epi and clinical laboratory partners. (Strategy 1b or 1c)

Travel support for the 2025 ELC Annual Meeting.
65 awards; average of $6,000 per award
Funds should be requested to support travel for all ELC Governance Team members as well as a fiscal representative. If only requesting travel support to the ELC Annual Meeting, the full Work Plan does not need to be submitted.

Project C: Health Information System (HIS) Capacity (p. 65-86)

65 awards; average of $430,000 per award

CDC Requests the Following:

- *Include ALL technical staff in your application that are needed to support laboratory data exchange. Please consider:*

    - *Staff needed to support all aspects of the LIMS (i.e. admin, configuration/maintenance support)*
    - *Integration engineers and vocabulary specialists*
    - *Web portal administrators*
- *Please show how you are splitting funding up across ELC and other sources of funding such as PHEP and the Public Health Infrastructure Grant (PHIG).*
- *Considerations around performance measures:*
    - *Please ensure you have a method to collect and track any shared services like Tableau or other data visualization platforms (CDC or partner provided; internal to laboratory or jurisdiction)*
    - *Performance measure C.13 - an important measure tied to the PH data strategy and helps to show progress*
    - *Performance measure C.14 – please be consistent in defining these systems within your lab sections (i.e. chemistry on; micro on)*

APHL Suggested Activities:

- *Consider requesting funds for informatics staff to attend the following conferences or meetings:*
    - *Request additional funds (above those required under Attachment B) for Informatics leads to attend the 2025 ELC Annual meeting in Atlanta.*
    - *2025 APHL Annual Meeting: https://www.aphl.org/conferences/annualmeeting/Pages/default.aspx*
    - *NACCHO 360: https://www.nacchoannual.org/home.*
    - *PHI*con (NACCHO's inaugural conference specifically focusing on public health informatics, surveillance, and IT. https://virtualcommunities.naccho.org/2024phicon/home*
    - *Council of State and Territorial Epidemiologists (CSTE) Annual Meeting: https://www.csteconference.org/*
    - *LOINC Laboratory Conference: https://loinc.org/meetings*
    - *American Health Information Management Association (AHIMA) Health Data and Information Conference https://conference.ahima.org/*
    - *Healthcare Information and Management Systems Society (HIMSS) Annual Conference & Exhibition: https://www.himss.org/global-conference*

- *PHLs can request CDC data modernization technical assistance (DM TA) support for a number of informatics use cases through their DM TA request form in ELC CAMP (Technical Assistance tab): https://app.smartsheet.com/b/form/4fe7d6f0c607491abe1ea88209d5aaff*
    - ***ELR Technical Assistance** covers a broad range of support to enable and enhance ELR. More information about services in scope can be found at APHL's ELR Technical Assistance Overview: https://aphlinformatics.atlassian.net/wiki/spaces/EETAR/pages/1228472432/ELR+Technical+Assistance+ELRTA+Overview*
    - ***Cross Jurisdictional Data Exchange TA** supports enabling ELR between any two trading partners on AIMS. Find more information on the InterPartner Technical Assistance Overview: https://aphlinformatics.atlassian.net/wiki/spaces/EETAR/pages/1157988690/InterPartner+Technical+Assistance+Overview*
    - ***Data Modernization Initiative TA** supports foundational data exchange modernization activities*
    - ***Electronic Test Orders and Results (ETOR) TA** supports adoption and expansion of ETOR. See activity 9 below for ETOR guidance,*
    - ***Public Health Interoperability Message (PHLIP) TA** supports adoption and expansion of the PHLIP message to enhance laboratory surveillance reporting to CDC for influenza, SARS-CoV-2,*

and other respiratory virus results. Reporting to the U.S. World Health Organization Collaborating Laboratories System, National Respiratory and Enteric Virus Surveillance System (NREVSS), and related surveillance reporting can be consolidated using PHLIP messaging. Technical assistance is available for new PHLIP message implementation, message upgrades, and expanding use cases. PHLs should plan to consolidate NREVSS and related surveillance reporting using PHLIP messaging. Technical assistance is available for new PHLIP message implementation, message upgrades, and expanding use cases. PHLs should plan to:

- *Migrate PHLIP reporting to the current HL7 2.5.1 message standard*
- *Add ILINet provider and other epidemiologically important information such as level of care (inpatient or outpatient) to the PHLIP message*
- *Ensure all respiratory virus, including adenovirus and/or enterovirus typing, and norovirus test results are captured in the PHLIP message to replace manual reporting for NREVSS.*
- *Refer to Section II, Program J for PHLIP reporting activities.*

- *PHLs can also request technical assistance through APHL in support of message implementation, updates, enhancements and data transport efforts for the following data exchange projects by contacting the Informatics Help Desk at informatics.support@aphl.org*
  - ***Antimicrobial Resistance Laboratory Network (AR Lab Network)**: Plan to migrate AR Lab Network results reporting to CDC for CPOs and Candida spp. to HL7 messaging through the Data for Action on Antibiotic Resistance Threats (DAART) platform on AIMS. If applying for AR Lab Network Whole Genome Sequencing (WGS) activities, WGS metadata and linkage variables will need to be included in HL7 messaging. Refer to AR Lab Network activities under Section II, Program I.*
  - ***Animal Rabies ELR**: Please request technical assistance to support the electronic submission of rabies laboratory data to CDC. Refer to Rabies activities under Section III, Project R.*

Area B: Prevention and Intervention

8) Sustain and Enhance PHL Laboratory Information Management Systems (LIMS)

Level 1: Enhance existing information system(s) by adding or improving functionality.

- *Enhance existing LIMS to be able to create electronic orders and accept electronic results. This is essential to order reference testing from another laboratory and CDC as well as strengthening surge capacity.*
- *Prioritize the interfacing of laboratory instruments with the LIMS to reduce/eliminate data entry of test results, as appropriate. APHL suggests that the interface software also record the instrument and test-kit used as part of the data collected in the LIS for tracking and reporting outside the laboratory.*
- *Consider developing a strategic roadmap to identify priority improvements and value-add initiatives that target specific needs within the context of other national, interstate and intrastate modernization efforts.*
- *Work with LIMS vendor to implement LIVD import functionality for improved LOINC/SCT mappings and the R-based tool for creating value sets for LOINCs in the Reportable Condition Trigger Codes.*
- ***CDC asks that you submit an implementation plan to CDC before you go into procurement for any new LIMS (see "required tasks" for more info)***

Level 2: Enhance existing information system(s) by adding or improving functionality.

- *Consider requesting funds to conduct or expand a comprehensive analysis to assess the function, utility, and application of information systems, IT infrastructure, software packages, standards adoption, and tools across all laboratory workflows and business processes:*
  - *Test Requests and Sample Receiving*
  - *Specimen and Sample Tracking/Chain of Custody*
  - *Lab Information Management Systems (LIMS) across the enterprise- Legacy and new technologies*
  - *Test Results and Instrument Interfacing/Integration*
  - *Report Preparation and Distribution*
  - *Data Analysis, Knowledge Management*
  - *Interoperability and Data Exchange*
  - *Data Repositories*
- *Consider building FHIR functionality into base infrastructure to allow different applications to plug-in and interface with the LIMS. This allows all future tools (instrument interfacing, web portals, etc.) to use the standard FHIR API and negates the need to continually build and develop non-standard APIs.*

Level 3: Enhance existing information system(s) by adding or improving functionality.

- *Ensure that laboratory recruits and retains essential personnel for the ongoing maintenance and enhancements to the LIMS.*
- *Participate in workgroups and Communities of Practice such as CSTE's ELR Workgroup and HL7's Orders & Observations in addition and Public Health workgroup, and Lab Messaging Community of Practice.*
- *Expand acceptable and allowable data exchange formats, when appropriate, to receive laboratory data, e.g., csv from non-traditional testing sites.*

9) Sustain and Enhance PHL Electronic Data Exchange: Electronic Test Orders and Results (ETOR)

- *For submitters that do not have HL7 interface from their EHRs to the laboratory LIMS a web portal can be a vast improvement over paper test orders and results. Additional suggestions on ETOR implementation are included below.*

Level 1: Implement or enhance a web portal for ETOR.

- *Consider enhancing a web portal solution to allow ordering of all laboratory tests and retrieval of all laboratory results. Consider building an interface to support batched ordering and resulting.*
- *Include costs for web portal licensing and enhancements, as well as the addition of new tests.*

Level 2: Implement or enhance a web portal for ETOR.

- *Consider requesting support for dedicated staff to maintain active list of web portal users, serve as primary point of contact and provide troubleshooting/help desk support.*

Level 1: Implement an integrated ETOR solution.

- *Laboratories may have to expand services with a LIMS vendor to accommodate enhanced data exchange functionality. Include these costs in your ELC request.*
- *Consider requesting funds to specifically incentivize healthcare partners to engage in ETOR implementation with the laboratory. Please provide additional details about potential mechanisms for the laboratory to disperse these funds to the healthcare organization (HCO).*
- *Request support to engage with an ETOR Intermediary, reducing the need for disparate direct connections between the laboratory LIMS and external partners, and leveraging shared/centralized services.*

Level 2: Implement an integrated ETOR solution.

For laboratories considering engaging in the ETOR Intermediary solution, consider requesting resources for:

- *An ETOR Project Manager: this position works closely with the APHL project manager and directs the work assigned to the PHL, and also works closely with the healthcare organization team to align goals and tasks.*
- *A laboratory SME in the laboratory area(s) being implemented for ETOR. This role provides insight into specific lab processes and workflows, creates lab processes documentation with updated workflows.*
- *Informatics Technical Analyst: Collaborates with HCO to send/receive necessary artifacts and/or tests.*

For the full description of required roles, as well as time allocation, calendar, and detailed project activities, please visit: https://aphlinformatics.atlassian.net/wiki/spaces/APLP/pages/2273738827

Project D: Advanced Molecular Detection (AMD) (p. 87-94)

Total funds $4,000,000, 64 awards, average award varies by activity; to support:

- Applicants should apply either to be an AMD 'Training Lead' or 'Participant':
  - Training Lead: approximately 10 awards, average of $150,000-$300,000 per award based on demonstrated need
  - Training Participant: approximately 64 awards, average of $3,000-$10,000 per award based on demonstrated need
- AMD Bioinformatics Regional Resource (BRR) Lead: approximately 10 awards, average of $200,000-$350,000 per award based on demonstrated need, if these costs have already been covered via the *AMD Sequencing & Analytics 1* or *AMD Sequencing & Analytics 2* award, please do not request them to be covered under this award.

AMD Training and Workforce Development

AMD Training Lead:

- *Applicants can apply to be an AMD 'Training Lead' to provide training based on the needs for training in their region.*
- *Request resources needed for training including licenses for Zoom, laboratory and reagent supplies for wet-bench training, computing and software needs for training, etc.*

- *Request travel funds for on-site training with laboratories in your region, to serve as faculty at trainings outside of your region and/ or to attend trainings and conferences detailed in this flyer.*
- *Request funds for staff time to conduct the needs assessments and training.*
- *OAMD may consider funding multiple training leads per region. Consider applying even if your laboratory has not previously served in this role.*
- *AMD follows the PulseNet Regional Map: Participants | PulseNet USA | CDC*

AMD Training Participant:

- *Request funding for staff to attend training for in-person, virtual, workshops and other professional development activities. These may include attending regional trainings offered by the regional training lead(s) but can also be expanded to other trainings. Applicants should especially consider requesting funding for training for the staff funded under the AMD Sequencing & Analytics 1 or AMD Sequencing & Analytics 2.*
- *Applicants should NOT request funding for participation in trainings such as AMD Academy, AMD days, AR Lab network meetings, ELC meeting or DataCamp subscriptions as those are funded through other mechanisms. However, CDC will consider requests for travel support to other conferences including ID Lab Con, ASM Microbe, Cold Spring Harbor Laboratory Genome Informatics meeting, and others. For more information about the supported and unsupported activities, please see this flyer.*

AMD Bioinformatics Regional Resource (BRR):

- *Applicants can apply to be an AMD bioinformatics regional resource to provide technical support and assistance to their region.*
- *Applicants should plan to work with the AMD Regional Training Lead to perform an annual needs assessment to determine the needs of the region.*
- *Request funding for personnel, computing resources and capacity needs, as well as travel costs associated with providing technical assistance in your region and attending regional or national conferences.*
- *OAMD may consider funding multiple BRRs per region.*

Other Expenses:

- *Requests for personnel for laboratories that are not AMD Regional Training Leads or Bioinformatics Regional Resources are unlikely to be funded.*
- *Do not include requests for increasing sequencing capacity, software or computing infrastructure unless they are related to activities under applications for AMD training lead and/or AMD bioinformatics regional resource.*
- *AMD platform extended, core and domain leadership activities were funded through AMD Sequencing & Analytics 2 in the lab ELC cycle which were extended through July 31, 2027. Requests should NOT be made for those activities. However, personnel funded through those activities can be named as leads/responsible parties for activities under AMD training lead, participant, or bioinformatics regional resource.*
- *Funding from AMD Sequencing and Analytics 1 and construction funding is extended through July 31, 2026.*

HantaNet Funding

CDC anticipates making a total of $160,000 available for Budget Period 1 to qualifying ELC recipients.

- *Laboratories who received funding for this activity in during last year's ELC Funding cycle are especially encouraged to apply.*

Project E: National Wastewater Surveillance System (p. 95-105)

20 awards; average of $300,000 per award

- *Most Wastewater Surveillance (WWS) programs should be completely or partially funded through July 2027 with NWSS 2.0 funds. If your program will not have funding needs through July 2027 you do not need to apply for BP1.*
- *If your WWS program is not fully funded through July 2027, you should request funds for staff, reagents, contracts or equipment that represent unmet needs or gaps. Do NOT duplicate budget requests that are already included in NWWS 2.0.*
- *For BP1 quantitative detection of SARS-CoV-2 is the minimum requirement and variant tracking is encouraged but optimal.*
- *For BP1, expansion to other targets is not required but will be considered for funding.*
- *WWS implementation guidance is described in APHL's testing guide. https://www.aphl.org/aboutAPHL/publications/Documents/EH-2022-SARSCoV2-Wastewater-Surveillance-Testing-Guide.pdf*
- *Please note that there are only two tiers for this NOFO compared to the previous three tiers.*

Tier 1: National Wastewater Surveillance System (NWSS)

- *Tier 1 strategies and activities include both laboratory and epidemiology components for dedicated support staff for coordinating wastewater surveillance activities, data reporting, sample collection, laboratory testing, equipment, and supplies.*

Tier2: National Wastewater Surveillance System Centers of Excellence (NWSS CoEs):

- ***National Wastewater Surveillance System Centers of Excellence (NWSS CoEs):*** *CDC is seeking applicants for a fifth NWSS CoE to support the implementation and continued development of wastewater surveillance for public health action. CoE applicants may propose additional activities that support the advancement of wastewater surveillance, but cannot be used to support research-associated activities. If research activities are described for the purpose of providing program context, please clearly indicate that no ELC funds are requested to support such activities. NWSS CoEs will be headquartered in state health departments, each CoE must partner with at least one academic institution and at least one wastewater utility.*

Area A: Surveillance, Detection and Response

1) Surveillance data management (Tier 1)

a) Data Coordination

- *Consider requesting funds to purchase a secure data management system implementing standardized processes for sample accessioning.*

b) Submit wastewater data

- *Consider development of detailed protocols and timelines in collaboration with partners, to ensure your jurisdiction is meeting or exceeding project requirements.*

3) Enhance laboratory capacity for wastewater testing (Tier 1)

a) Plan and implement laboratory workflows

- *Request funds to support staff required to assure NWSS activities are fully supported. Costs associated with administrative support will also be considered.*
- *Request funds for travel costs for scientists to attend the annual NWSS summit, technical trainings APHL's annual conferences and wastewater surveillance and laboratory conferences.*
- *Request funds to support partners through stipends to ensure the safe collection and transport of samples to the testing laboratory.*
- *Consider materials required for proper transport and storage of samples, such as coolers, consumable materials, cold packs, thermometers and laboratory refrigerators.*
- *Consider general laboratory safety, biosafety and waste disposal requirements for your laboratory, including but not limited to personal protective equipment (gloves, glasses, shields, respiratory protection, disposable lab coats/coverings) waste disposal (sharps containers, biohazard containment materials, autoclave supplies.*
- *Consider equipment and supplies for processing wastewater samples (will vary by method/workflow)*
    - *Storage - laboratory refrigeration at 4 degrees C*
    - *Sample homogenization (i.e., sonicators, mixers, bead bashers)*
    - *Sample clarification (i.e., filtration systems, centrifuges)*
    - *Sample concentration (i.e., ultrafiltration, electronegative filtration, ultracentrifugation and wet chemical techniques - polyethylene (PEG) precipitation and skim milk flocculation)*
    - *Automated extraction units such as the KingFisher Flex system to increase throughput.*
    - *RNA Extraction - extraction kits specific to your workflow. Laboratory controls (matrix control, human fecal normalization, quantitative measurement controls, inhibition assessment and negative controls).*
- *Consider instrumentation and reagents needed to detect and measure SARS CoV-2 and other pathogens. Digital PCR is the preferred method.*
    - *Subject matter experts at the National Center for Emerging and Zoonotic Infectious Diseases, centers of excellence, and/or vendor user groups through APHL are able to provide technical support for selected digital PCR platforms.*

b) Automated data transfer

- *APHL recommends collaboration with health department and informatics partners to assess instrument interface to the facility LIMS and from the LIMS to the DCIPHER portal.*
- *Considering funding needs for automating LIMS systems and supporting LIMS staff.*

4) Wastewater Sequencing (Tier 1)

a) Prospective Sequencing

- *APHL recommends including funds for the laboratory and informatics personnel, equipment and supplies necessary to be successful.*

b) Link Sequencing data

- *Consider collaborations and public health partnerships required to link the various sources of sequencing data.*

6) Enhance workforce capacity (Tier 2)
- *Consider funds for site visits (both travelling to others and planning your own).*
- *Consider applying to APHL fellowship and internship programs to supplement your workforce.*

7) Surveillance metric development (Tier 2)
- *APHL recommends collaboration with wastewater utilities, public health laboratories and other partners and subject matter experts to develop metrics that prioritize sites for public health action.*
- *APHL recommends collaboration with laboratory scientists, epidemiologist and informatics staff to identify and link relevant public health data sources to guide actions of wastewater surveillance data.*

8) Knowledge transfer (Tier 2)
- *Consider funds and personnel to collaborate with/travel to other health departments/laboratories for training, acquisition of resources and dashboard development.*

9) Evaluate laboratory workflows (Tier 2)
- *See 3)a.*
- *Consider laboratory supplies and equipment needed for implementations of laboratory methods.*

10) Effective scales of wastewater testing (Tier 2)
- *APHL recommends collaboration between utilities, laboratory scientists, epidemiologists and other subject matter experts to determine sampling plans/frequency and geographic scale (sewer shed, sub-sewer shed, building level) for different targets that will increase data utility.*

Area C: Communication, Coordination, and Partnerships

12) Coordinate & partner to optimize national wastewater surveillance (Tier 1)
- *Join the APHL Wastewater Surveillance Laboratory Community of Practice (CoP). All public health and environmental laboratories in NWSS are strongly encouraged to participate. Join by sending a request to erin.morin@aphl.org.*
- *Engage with all APHL community of practice activities and resources (monthly calls, digital ColLABorate platform, APHL's technical user group vendor technical user groups and APHL's Public Health Pricing List). Email erin.morin@aphl.org*
- *Attend the CDC Health Department CoP as your schedule allows.*
- *Include health departments, laboratories and utilities in all discussions related to testing.*

13) Public health communication (Tier 2)
- *Consider collaborating with health departments, laboratories and WWTF to develop communication tools that will best help translate wastewater data to civic leadership and the public.*
- *Consider including the personnel and funds needed to develop these resources.*

14) Improve wastewater utility data collection and sharing (Tier 2)

- *Work with wastewater utilities and the Water Environment Federation (WEF) to identify effective, efficient, and timely ways to capture and share wastewater treatment and wastewater collection metadata with health departments.*
- *Consider offering utilities stipends for their contributions (personnel, equipment -autosamplers).*

Project F: Emerging Issues (p. 106-109)

Funds will only be available in the event of a local or national infectious disease outbreak. All proposals should request $3,000,000 (small jurisdictions may request less while very large jurisdictions may request more). This request will likely be marked "approved but unfunded" in your initial budget markup, but it will expedite the release of funds should outbreak conditions warrant.

Section II: Emerging Infectious Disease Programs

Program G: Enteric, Foodborne, Waterborne, and Zoonotic Diseases: Surveillance, Detection, Response, Reporting, and Prevention (p. 110-133)

56-59 approximate awarded, approximate average award is $575,000.

Tier 1 includes CaliciNet, CryptoNet, InFORM and Regional Meetings, NARMS, National Case Surveillance, NORS, One Health Harmful Algal Bloom System (OHHABS), Outbreak Detection, Response and Control, PulseNet, SEDRIC.

Tier 2 includes CryptoNet Enhanced, *Cyclospora* genotyping, Environmental Microbiology (EM), FoodCORE, FoodNet, Harmful Algal Bloom (HAB) Surveillance, Response, and Mitigation, National Respiratory and Enteric Virus Surveillance System (NREVSS) Enhanced, NoroSTAT, OutbreakNet Enhanced, PulseNet Area Labs, PulseNet Metagenomics.

Tier 3 includes Integrated Food Safety Centers of Excellence (Food Safety CoEs).

Area A: Surveillance, Detection, and Response

2) Tier 1: Improve lab surveillance, detection, preparedness, and response

Improve laboratory activity coordination, workflows, and information flow

i) Model practices for laboratory activities can be found via PulseNet, FoodCORE, and APHL

2a) Improve laboratory activity coordination, workflows and information flow and 2b) Transition to PulseNet 2.0 for analysis of molecular subtyping data

- *Request funds so that staff are trained in the protocols used by all projects under Program G, and when necessary, support trainings at a PulseNet Area lab, at another peer PHL, or at CDC.*
- *Refer to the PulseNet IT Whitepaper in order to prepare for the transition to PulseNet 2.0*
- *Consider packaging and shipping costs for sending outbreak-related and NARMS-requested isolates to CDC for antimicrobial susceptibility testing. Outbreak isolates should be submitted as soon as possible and should not be batched with NARMS routine surveillance isolates.*

- *Request funding for equipment, supplies and personnel to support isolate recovery of CIDT positive specimens.*
- *Request funding to enhance/maintain courier services for specimen transport from clinical laboratories to public health laboratories.*
- *Consider packaging and shipping costs for sending routine surveillance isolates to CDC for antimicrobial susceptibility testing, per the required NARMS performance metrics and the Enteric Disease Isolate Submission Table (located here: Table 1 version 6. Submission of Enteric Disease-associated Bacterial Isolates and Specimens | CDC).*
- *Consider all costs for conducting laboratory-based surveillance, diagnostics and subtyping for PulseNet, CryptoNet, CaliciNet, NARMS and general surveillance and outbreak investigation functions, including waterborne diseases:*
- *Consider all costs to support validations, if required, to transition to updated protocols and/or PulseNet 2.0*
- *Refer to PulseNet SharePoint site or APHL's PulseNet site for SOPs on instrumentation and reagents kits supported by the PulseNet network and analysis of molecular subtyping data.*

- ***CaliciNet***
  - *Include requests for personnel, reagents and consumables (outbreak and sporadic cases) and typing using DNA sequencing (Sanger or NGS)*
  - *Consider including funds for freezer purchase for storing positive norovirus specimens and norovirus negative specimens with viral epidemiology for three years.*
  - *Include specimen collection costs including providing kits, shipping and/or courier systems.*
  - *Request travel for 1 CaliciNet certified laboratorian to attend the Annual User Meeting.*

- ***CryptoNet***

  - *Include costs for collecting, screening and/or shipping Crypto positive clinical specimens to the CryptoNet Reference Laboratory at CDC for subtyping.*

  Consider Tier 1 NARMS funding to support your ability to: *Package and ship routine surveillance isolates to CDC for antimicrobial susceptibility testing (AST) based on the Enteric Disease Isolate Submission Table located at https://www.cdc.gov/ncezid/dfwed/edlb/edlb-lab-submission.html and current guidance from CDC. Rapidly package and ship select isolates of interest and outbreak isolates to CDC for antimicrobial susceptibility testing (AST) when requested based on the Enteric Disease Isolate Submission Table located at https://www.cdc.gov/ncezid/dfwed/edlb/edlb-lab-submission.html and in consultation with CDC.*

Tier 2: CryptoNet Enhanced

For CryptoNet certified sites:

- *Include costs for personnel, equipment and maintenance, software upgrades and laboratory supplies in order to 1) conduct near real-time subtyping for Cryptosporidium using CryptoNet protocols; 2) actively participate in evaluating and/or validating new methods, software modules and scripts.*
- *Consider training and certification costs including travel to in-person workshops.*

For CryptoNet Regional Laboratories:

- *Include costs for personnel to provide troubleshooting, training and analysis assistance for participants in your respective region.*
- *Include personnel, equipment and maintenance, software upgrades and lab supply costs in order to provide surge capacity for participants in your respective region.*

a) Sustain and enhance laboratory diagnostic/subtyping capacity
Same as above

Tier 2: *Cyclospora* Genotyping

- *Consider the costs of reagents, supplies, and equipment to implement or continue amplicon-based multilocus sequence typing methods to provide genotyping information for Cyclospora cayetanensis. CDC protocols are available upon request.*
- *Submit NGS sequence data to CDC and conduct outreach with PHLs in PulseNet region for NGS of C. cayetanensis*
- *Consider requesting funding to travel to training either at CDC or another public health laboratory.*

Tier 2: Environmental Microbiology (EM)

- *Consider travel costs for environmental microbiology training at partner laboratories (CDC, public health, environmental or academic laboratories) and registration and travel to technical conferences to enhance skills and share knowledge.*
- *Participate in the APHL Environmental Microbiology Outbreak Response Community of Practice through bi-monthly calls and the digital platform to connect to other jurisdictions also building up their environmental microbiology outbreak response programs.*
- *Consider joining the EPA Water Laboratory Alliance and participating in relevant exercises to assess response capabilities and identify areas for improvement.*
- *Consider the staffing and training requirements for sampling and testing, cost of reagents, supplies and equipment for environmental microbiology test kits and culture. Consider the cost of and training for equipment necessary to measure physiochemical water quality parameters (temperature, pH, electrical conductivity and dissolved oxygen).*
- *APHL recommends working with subject matter experts at CDC and local and state partners to develop metrics for environmental assessments associated with waterborne disease investigations.*
- *Consider resource needs for reporting and sharing of laboratory results.*
- *Jurisdictions may also contract with laboratories for this testing to provide response capacity.*

Tier 2: FoodCORE

Consider Tier 2 FoodCORE funding to support your ability to:

- *Participate in monthly FoodCORE calls and program site visits.*
- *Implement model FoodCORE practices that improve laboratory activity coordination, workflows, and information flow (https://www.cdc.gov/foodcore/modelpractices.html) including:*

    - *ensure routine transport of clinical specimens and specimens from outbreak-associated cases to the public health laboratory;*
    - *conduct real-time subtyping of Salmonella, STEC, and Listeria;*
    - *conduct real-time testing/diagnostics of parasitic identification and calicivirus characterization; and*
    - *collect samples from persons with hepatitis A virus infection linked to a foodborne disease outbreak for molecular characterization.*
- *Report annual metrics and participate in FoodCORE strategic planning during BP1.*
- *Travel to attend the annual FoodCORE vision meeting and an InFORM Regional Meeting*
    - *FoodCORE, OutbreakNet Enhanced, PulseNet Area Labs, and Food Safety CoEs are expected to travel more than one representative to the InFORM Regional Meeting.*
- *Conduct site-specific activities to support faster, more complete foodborne and enteric disease work in their jurisdiction.*

Tier 2: FoodNet

Consider Tier 2 FoodNet funding to support your ability to:

- *Participate on monthly steering committee and work group calls.*
- *Participate in ad-hoc site visits.*
- *Help achieve FoodNet's goals to inform national-level surveillance and antimicrobial resistance as well as evaluate the effectiveness of regulations and interventions aimed at reducing the burden of select foodborne illnesses including:*
    - *isolate and confirm select FoodNet pathogens from CIDT+ specimens as quickly and efficiently as possible.*
    - *conduct real-time subtyping and molecular characterization of FoodNet pathogens.*
    - *work with epidemiologists to ensure the accuracy and thoroughness of laboratory data variables requested by FoodNet.*
    - *work with epidemiologists to link laboratory (e.g., WGS, species, serotype, etc.) and epidemiologic data for FoodNet cases.*

Tier 2: NoroSTAT

- *Ensure adequate personnel in order to sequence and report all laboratory-confirmed norovirus outbreaks to CaliciNet within 7 business days (10 days for NGS).*

Tier 2: National Respiratory and Enteric Virus Surveillance System (NREVSS) Enhanced

19) Tier 2 NREVSS Enhanced: Improve sporadic enteric virus surveillance/testing

- *Ensure adequate personnel in order to sequence and report all laboratory-confirmed norovirus samples to CaliciNet*

Tier 2: PulseNet Area Laboratories

Tier 2 PulseNet Area Lab: Support regional PulseNet capacity

a) Enhanced outbreak investigation response and reporting

- *Request funding to purchase reagents and supplies in order to assist with sequencing PulseNet pathogens requests within the region. This includes:*

    - *Personnel necessary to support PulseNet Area laboratory duties*
    - *Reagents/supplies*
    - *Equipment*
- *Request funding to support equipment, supplies and personnel for isolate recovery of CIDT positive specimens within the region.*
- *Request funding to enhance/maintain courier services for specimen transport from public health laboratories within the region.*

23) Tier 2 PulseNet Area Lab: Enhance coordination among lab partners

a) Improve surveillance to drive public health action

- *same as 22 a) above*

24) Tier 2 PulseNet Area Lab: Enhance coordination among epi, lab, and HIS

a) Improve laboratory coordination and information flow between PHLs

i) Coordinate and host PulseNet regional and training meetings

- *Request funding to purchase resources for regional training (supplies, reagents)*

Tier 2: PulseNet Metagenomics

25) Tier 2 PulseNet Metagenomics: Participate in metagenomic method development

a) Advance PulseNet metagenomics methods

- *Highly Multiplexed Amplicon Sequencing (HMAS) project: For SPHLs already participating in the HMAS pilot project, please request funds for reagents and service contract agreements under Program G.*

Program H: Healthcare-associated Infections, Antimicrobial Resistance, and Antibiotic Stewardship (p. 134-144)

There is no laboratory funding associated with this project. AR Lab Network Activities have moved to Program I.

Program I: Antimicrobial Resistance Laboratory Network (AR Lab Network) (p. 145-168)

Tier 1: Basic Funding; approximately 56 awards, $62,500 approximate average award

- *All activities under Tier 1 are required for all applicants.*
- *Area A, activity 1D – to increase or sustain capacity to perform CLIA-compliant routine organism identification for yeast – was an optional Tier 2 and required for Tier 3 activity in BP5, but has been changed to a Tier 1 activity, which is required for all funded labs.*
    - *Laboratories should consider training or validation needs for MALDI-TOF or other yeast identification methods.*
- *In BP5 the activities in Area A, Activities 1a-c only included CRE and CRPA, it now includes CRAB, this is intended to sustain capacity built with SHARP funds.*
- *A new addition is area C, activity 12e to "identify and engage with facilities that have been historically underserved, higher risk for AR-related illness, and/or limited resources for detection*

of emerging AR-related threats". Consider how your laboratory can improve outreach to clinical laboratories or healthcare facilities in underserved areas.

- *Note that the required tasks have increased in this NOFO, while the performance measures have decreased. The required tasks do list the expectations on when results should be sent to the submitting lab and to CDC.*
- *One of the new required tasks (#4) is to update test order forms, LIMS, and other data systems. This process is labor intensive and takes time. APHL and CDC will be working with the labs to do this, but laboratories should consider personnel time required to complete these tasks.*
- *Another new required task (#10) is to track the CDC AR Lab Network FedEx account and report to CDC on a routine basis. Details are still being worked out on exactly what this means, but CDC expects this to take approximately 2% of a staff members time monthly.*
- *Include request for personnel, reagents, supplies and equipment to maintain and sustain AR Lab Network testing activities.*
- *PHLs should also consider staffing needs to support testing, outreach and coordination activities.*
- *All testing should be in accordance with current Clinical and Laboratory Standards Institute (CLSI) and in compliance with Clinical Laboratory Improvement Amendments (CLIA) regulations.*
- *A no-cost extension was granted for SHARP 1, extending the use of the funds through July 31, 2026. SHARP 2 funding will go through July 31, 2027. PHLs should utilize these funds in addition ELC core funding to support AR Lab Network testing activities.*
- *All tiers must ensure applicable AR Lab Network reporting to CDC using DAART is implemented and maintained. Review APHL ELC guidance language included under Project C: Health Information Systems Capacity for general Informatics guidance and additional information that are applicable to these activities.*

Tier 2: Enhanced Laboratory Capacity, optional, number of awards and average award may vary depending on the number of awards given

- *Tier 2 activities are all optional. PHLs should consider applying for Tier II activities only if needed and feasible; laboratories applying for Tier 2 activities must apply for Tier 1 activities. Include requests for personnel, reagents, supplies and equipment. If applying for Tier 2 activities, PHLs should consider applying for the activities for which there already exists laboratory capacity and needed resources, such as testing platforms.*

Tier 3: AR Lab Network Regional Laboratories; 7 awards, approximate average award of $1,430,000

- *CDC previously selected seven PHLs to serve as regional labs. However, in the current NOFO all PHLs are eligible to apply to serve as regional laboratories. Existing AR Lab Network regional laboratories that are reapplying should consider including requests for funds required to maintain and sustain existing services as well as provide enhanced testing or other services.*

- *The NOFO outlines both required and optional strategies and their associated activities that candidate AR Lab Network regional laboratories may apply. Please note that all activities except those under Strategy 6 and 10 below are required. CDC will give preference to laboratories that describe advanced existing capacity for optional as well as required activities. If applying for optional activities, justification on why it is needed and if it is feasible is required.*

National TB Molecular Surveillance Center: 1 award, estimated average award of $1,800,000

- *Laboratories applying to be the National TB Molecular Surveillance Center should request funds to accommodate personnel needs as well as supplies, reagents and storage needs when developing proposals.*
- *While CDC intends to fund up to three regional laboratories to provide CLIA-compliant WGS testing of TB isolates for prediction of antibiotic resistance and surveillance in subsequent years, applicants should not apply to be a regional laboratory at this time.*

Area A: Surveillance, Detection, and Response

1) Enhance and sustain laboratory testing for surveillance and reporting (Tier 1)

- *Testing activities 1a-1c (pg. 151) include organism identification, carbapenem-resistance mechanism testing and antibiotic susceptibility testing (AST) for carbapenem-resistance Enterbacterales (CRE, carbapenem-resistant Pseudomonas aeruginosa (CRPA) and carbapenem-resistance Acinetobacter baumannii (CRAB). CRE and CRPA testing activities were previously funded via ELC core funding and CRAB testing was funded through SHARP testing. Continue to request funds to maintain and sustain capacity.*
- *Activity 1d (pg. 151) was previously an optional activity but is now required of all AR Lab Network PHLs. If previously funded, continue to request funds to maintain and sustain capacity. If this is a new activity, consider personnel needs as well as supplies and reagents when developing your proposals. Testing priority should be given to:*
    - *Confirmed or suspected C. auris from any body site*
    - *Candida species other than C. albicans from any specimen source*
    - *Yeast isolate from any specimen source when unable to identify species after identification was attempted.*

Sustain AR capacity to implement AR Lab Network Activities (Tier 1)

- *PHLs should ensure all documentation related to quality management, including validation, verification and enrollment in performance evaluation exercises are properly recorded and stored.*

Expand and sustain AR Lab testing and reporting (Tier 2)

- *Activities 3f-3i (pg. 152-153) are all optional. PHLs should consider applying only if needed and feasible. PHLs who apply should note the data requirements of each activity and include funding requests to support needed bioinformatics analyses.*

Expand and sustain AR lab testing and reporting for surveillance (Tier 3)

- *Activities 4a-4d are all required. Continue to request funds to maintain and sustain capacity for activities 4a-4c (pg. 153-154).*
- *Activity 4d (pg. 154) is a new required activity. In addition to supplies and reagents, consider staff time for recruitment of clinical isolates when developing your proposals.*

Expand and sustain AR lab testing for response (Tier 3)

- *Activities 5a-5c are all required. Continue to request funds to maintain and sustain capacity for activities 5a and 5b (pg. 154).*
- *Activity 5c is a new required activity. When developing proposals, consider supplies, reagents as well as personnel for the wet lab and dry lab components. Including funding requests to support the needed bioinformatics analysis.*

- *Consider including costs of validation colonization screening or other high volume testing on high throughput platforms, such as the Hologic Panther Fusion and the Roche Cobas 5800.*

Implement or maintain additional laboratory capacity (some regional laboratories) (Tier 3)

- *Activities 6a-6h (pg. 155-159) are all optional. If applying, describe any existing capacity to support the testing activity and justification as to why the testing is needed and feasible.*
- *If previously funded for Activity 6b (AST on N. gonorrhoeae, pg.156), the antibiotics for AST has increased to 9 antibiotics for AST and one for Etest; therefore, adjust your funding requests accordingly.*
- *N. gonorrhoeae 6b and 6c: Ensure that funding requests include the necessary equipment and materials to allow for efficient specimen collection and transport, and completion of the various test methods described in the NOFO. As there may be overlap in the testing methodologies related to this activity and those previously funded via SHARP and requested in Project Q (CARGOS), laboratories should detail differences in the specimen types or populations that will be tested using funds from the applicable Program/Project area.*
- ***Note that laboratories that received SHARP funding for GC Etest activities may not apply for activity 6c.***
- *If applying for Activity 6g (pg. 158, H. influenzae), include funding requests for convention AST methods, as identification and serotyping will be funding through the VPD reference centers.*
- *Surveillance activities related to Activity 6h (antimicrobial resistant Mycoplasma genitalium, pg. 159) are still being determined and may not be finalized before the end of BP1. Therefore, labs are encouraged to focus on other optional activities.*

Sustain workforce capacity to implement AR Lab Network regional laboratories (Tier 3)

- *Public Health Laboratories interested in applying to be the National TB Molecular Surveillance Center must be able to perform prospective WGS for the entire requested volume of 8,000 isolates per year and be able to sustain the capability for MTB WGS with the understanding that volume may decline in subsequent years (required 7a).*
- *Applicants should describe their experience with WGS testing of Mtb, including achieved and/or predicted turnaround time from isolate receipt to transmission of WGS FASTQ files to the CDC and ability to submit isolates to the CDC (required 7b).*
- *Applicants must have current ability to sequence on the Illumina NextSeq platform using the NextSeq Mid-Output Kit with 96 samples per run.*
- *While implementation and use of CLIA-compliant WGS for prediction of antibiotic resistance in Mtb are optional strategies (7c and 7e), applicants are encouraged to discuss their progress and / or plans for clinical (CLIA-compliant) use of generated WGS data and electronic test ordering and reporting (7d). Cost efficient methods are preferred (e.g. the NextSeq), but there is no preference for use of a particular data analysis pipeline.*

Area B: Prevention and Intervention

Tier 2 activities are optional enhanced laboratory capacity activities intended for non-regional laboratories.

Tier 3 activities are intended for regional laboratories. Applying to be an AR Lab Network regional laboratory is optional, but for those that apply, note that all activities except those under Strategy 6 and Strategy 10 are required.

Expand and sustain AR Lab testing and reporting (Tier 2)

- *If applying for Activity 8j (C. auris colonization screening, pg. 160), consider supplies, reagents, equipment and personnel when developing proposals. In addition to testing, PHLs should consider staffing needs to support outreach and coordination activities needed for C. auris colonization. If possible, include the utilization of a high-throughput testing platform that can also be utilized for additional AR Lab Network testing, such as the Hologic Panther Fusion or the Roche Cobas 5800.*

Expand and sustain AR lab testing for response (Tier 3)

- *Activities 9k-9l (pg. 160-161) are required for Tier 3 labs.*
    - *CDC is looking for Tier 3 laboratories to demonstrate existing capacity for Activity 9k (Support State-led Epidemiologic Investigations), such as detection of vancomycin resistant Staphylococcus aureus, and could perform in a surge capacity. Note, all Tier 3 laboratories may be considered.*

Implement or maintain additional laboratory capacity (some regional laboratories) (Tier 3)

- *Tier 3 laboratories interested in applying for Activity 10a (CRE and CRPA in Companion Animals, pg. 161) should demonstrate:*
    - *Existing connections and collaborations with their public health HAI/AR coordinators and state or local veterinarian laboratories.*
    - *The capability to perform testing on non-human samples.*
    - *The ability to track that non-human samples.*
    - *Excellence in CPOs screening capacity*
    - *The ability to participate in activity-building discussions specific to this new activity, as the methods, processes and data transfer process will need to be finalized.*
- *Tier 3 laboratories interested in applying for Activity 10b (Wastewater Surveillance, pg. 162) should demonstrate:*
    - *Existing communication channel between state HAI/AR epidemiologist and local groups that are doing environmental sampling.*
    - *Existing collaboration with a local NWSS program*
    - *Laboratory capacity to take on any additional colonization screening samples without using surge capacity at other regional labs.*

Area C: Communication, Coordination, and Partnerships

Tier 1 activities are for all recipients applying for AR Lab Network funding

Tier 3 activities are intended for regional laboratories. Applying to be an AR Lab Network regional laboratory is optional, but for those that apply, note that all activities except those under Strategy 6 and Strategy 10 are required.

Sustain AR capacity to implement AR Lab Network Activities (Tier 1)

- *PHLs should consider personnel needs for both testing and programmatic activities.*

Improve laboratory and epidemiology coordination and outreach (Tier 1)

- *For Activities 12n-q (pg. 164), PHLS should highlight existing collaborations and participation in cross-cutting programs and organizations. This can include other federal programs as well as national, regional or local clinical associations.*
- *For Activity 12r (Engaging facilities, pg. 164), PHLs should utilize governmental offices (i.e. Centers for Medicare and Medicaid Services, National Center for Health Statistics, Bureau of Labor Statistics) and reputable non-profit organizations (i.e. Pew Research Center) to determine geographical areas and demographics within their jurisdictions that have been historically underserved.*

Advance electronic information exchange implementation (Tier 1)

- *PHLS should plan to work closely with CDC and APHL to implement or sustain data requirements. Please include staff time for these activities.*

Sustain workforce capacity to implement AR Lab Network regional laboratory activities (Tier 3)

- *Tier 3 laboratories should include funding requests for supplies and reagents as well as personnel needed for training. Regional laboratories are encouraged to include funding for travel to assist other laboratories in their jurisdiction with training.*

Improve laboratory and epidemiology coordination and outreach (Tier 3)

- *Tier 3 laboratories should demonstrate existing collaboration and communication channels with CDC programs and include personnel time needed for relevant activities.*

Advance electronic information exchange implementation (Tier 3)

- *Tier 3 laboratories should plan to work closely with CDC and APHL to implement or sustain data requirements. Please include staff time for these activities.*

Program J: Enhanced Surveillance for Vaccine-Preventable Disease (VPD) and Respiratory Diseases (p. 169-201)

Tier 1 funds: approximate number of awards is 60; approximate average award of $277,500

- *For Tier 1 funds, laboratories should consider activities that were previously successful/funded in past NOFOs under activities O, P, Q and R.*
- *Laboratories should focus on the integration of testing and testing personnel for the tier 1 pathogens/gaining efficiencies in testing.*
- *For required activities, APHL strongly suggests that you that you place a high priority on personnel. At a minimum, be sure to include staff that was funded on ELC last year. Funding is expected to support a minimum of 0.5 FTE personnel to conduct influenza diagnostic testing.*
- *Consider requesting funding for 0.5 FTE personnel to conduct SARS-CoV-2 and RSV testing.*
- *As most reagents and many consumables used for influenza testing are provided by the Influenza Reagent Resource (IRR), those budget items are not likely to be funded.*
- *Consider requesting funds for the maintenance, implementation or expansion of non-influenza respiratory virus tests including non-IRR reagents and personnel. Funding can be used to support staffing, supplies, reagents, shipping and outreach to support testing, surveillance and informatics.*
- *Consider packaging and shipping supplies and/or implementing a courier network to increase specimen submissions to your laboratory*

- *Consider outreach activities (webinars, submitter incentives, etc.) that would enhance relationships with clinical laboratories and hospital networks to encourage specimen submission.*
- *Most jurisdictions do not receive laboratory specific ELC funding for vaccine preventable disease testing. However, APHL suggests coordinating with your epidemiology or immunizations partners to ensure that adequate testing services are in place to meet your jurisdictional surveillance and outbreak response needs. In order to improve efficiencies and offer a broader range of testing services some services are available through shared service models including the Vaccine Preventable Disease Reference Centers.*
- *Consider budgeting for reporting of non-influenza respiratory pathogen laboratory results to CDC programs including NREVSS, NESS and NATRS. If your laboratory performs typing of adeno and/or enteroviruses, APHL strongly encourages you propose reporting subtype/genotype results to NESS and/or NATRS. For NREVSS reporting, reporting non-influenza respiratory virus surveillance data automatically through PHLIP can replace manual reporting to the National Respiratory and Enteric Virus Surveillance System. Review APHL ELC guidance language included under Project C: Health Information Systems Capacity for general Informatics guidance and additional information that are applicable to these activities.*

Tier 2 Legionnaires' disease (LD) activities:

Core Capacity: approximate number of awards is 8-10; approximate average award is $50,000-$200,000

- *APHL suggests submitting proposals that will improve surveillance and testing capacity and fill gaps in core capacity for* Legionella spp*. Suggested activities include developing or maintaining proficiency and expertise in Legionella culture, PCR and NGS methods as well as increasing the number of lower respiratory specimens submitted to PHLs.*
- *Laboratories should request funding for at least portion of FTE to maintain basic testing capacity for legionella testing in their jurisdiction.*
- *Laboratories should request funds for reagents to provide culture and molecular testing for Legionella. Request funding for equipment (including service/maintenance), consumables and reagents not provided by CDC.*
- *Consider needs small equipment such as colorimeters for water quality parameters.*

** For PCR specifically, note that there are several LDT protocols publicly available. Labs are encouraged to propose expenses (e.g., validation testing expenses and consumables) related to the onboarding of a PCR method to detect Legionella in clinical specimens and/or isolates.*

** If a lab is seeking to become ELITE certified, they may want to consider budgeting for culture supplies and consumables in support of this effort.*

NOTE: Applicants for LD Enhanced Capacity and/or LD CoE activity funding do not also need to apply for LD Core Capacity activity funding. However, all LD Core Capacity required activities must be addressed through existing capacity or proposed LD Core Capacity workplans before applying for activities under LD Enhanced Capacity or LD CoE.

Enhanced Capacity: approximate number of awards is 1-5; approximate average award is $50,000-$250,000

- *Enhanced capacity includes core capacity activities. Propose projects with measurable outcomes. Describe activities that have the potential for public health impact beyond recipient's jurisdiction. Collaborate with epidemiologists to develop projects.*
- *Activities may include bringing in new testing capabilities or optimizing current assays. Consider budgeting for reagents and supplies to conduct validation studies.*

Area A: Surveillance, Detection, and Response

3. Enhance laboratory testing for surveillance and reporting

- *Request funding to support laboratory testing for each disease within jurisdiction (culture, typing, PCR, sequencing or other characterization). If testing is not done in jurisdiction, support packaging and shipping to reference center.*
- *Request funding to support influenza detection and subtyping year-round.*
- *Request funding to support testing for respiratory viruses (Influenza, SARS-CoV-2 and RSV at a minimum) including laboratory supplies and reagents for PCR detection, typing and subtyping methods.*

4. Collect isolates from meningococcal disease cases

- *Request funding for packaging and shipping supplies.*
- *Request funding to enhance/maintain courier services for specimen transport from clinical laboratories to public health laboratories.*
- *Request funding to enhance relationships with clinical lab partners to encourage specimen submission.*
    - *Aim for isolates from a diverse and representative population*

5. Improve laboratory coordination and outreach to increase efficiency

- *Consider outreach activities (webinars, submitter incentives, etc.) that would enhance relationships with clinical laboratories and hospital networks to encourage specimen submission. Work with epidemiologists to build or enhance relationships with submitters to increase respiratory virus specimen submissions.*
- *Engage with a diverse group of clinicians, clinical laboratories, hospital laboratories, local public health and other partners appropriate for each jurisdiction to encourage specimen submission to PHLs.*

6. Enhance epi-lab-HIT (Health Information Technology) partner coordination

- *Request funding to support collaboration with Epi and informatics to ensure laboratory submission form is collecting appropriate demographic and socioeconomic data.*
- *Request funding to support collection of complete socioeconomic data (e.g., race and ethnicity, location/residence, industry and occupation) to advance health equity.*

9) Engage in targeted optional surveillance activities

- *For optional activities, laboratories should budget for one-time expenses related to achieving the goals set forth the Tier 2 activities. This may include items such as laboratory and specimen collection supplies or funding for LIMS enhancements to meet the data requirements.*
- *For all optional enhanced surveillance activities consider requesting packaging and shipping costs for sending specimens or isolates to CDC or another public health laboratory for further characterization.*

n) Enhance influenza, COVID, RSV, & respiratory virus surveillance and reporting

- *Request funding to support pan-respiratory virus testing. Work with clinical laboratory network to collect specimens from patients with viral respiratory illness and test for at least influenza/SC2 multiplex assay and consider a broader respiratory panel, including RSV.*
    - *Funding to support laboratory supplies and reagents not provided through IRR. Note that reagents and consumables for influenza and SARS-CoV-2 testing will not be funded but reagents for testing of other respiratory viruses will be considered.*
    - *Funding to support validation studies to expand and enhance diagnostic testing and characterization of non-influenza respiratory viruses.*

Area C: Communication, Coordination, and Partnerships

b) Communicate and coordinate with multi-sector/diverse public health partners

- *Consider funds to support outreach, newsletters, webinars, conferences and other forms of educational opportunities.*

Program K: Vector-borne Diseases and Tick-Associated Conditions Building Comprehensive Programs to Identify, Diagnose, Report, Prevent, and Respond (p. 202-215)

Estimated awards are 60; estimated average award is $233,000

General Notes:

- *One budget is to be submitted for the whole program. Be sure to communicate with the epidemiologists and/or entomologists in your program to strategize and align funding requests.*
- *CDC Division of Vector-Borne Diseases released a BP1 compendium manual to aid in responding to Program K of the NOFO.*
- *A National Public Health Strategy to Prevent and Control Vector-Borne Diseases in People has been published here.*
- *NEW: Alpha-gal syndrome is listed among conditions for surveillance but there is no laboratory testing component.*
- *In this five-year cycle, funding levels are delineated as basic and enhanced rather than tiers 1-3.*
  ***Basic core capacity** for locally relevant vector-borne disease surveillance, laboratory testing, and response across all recipients receiving funds (Required Activities)*
  ***Enhanced capacity** for advanced vector-borne disease surveillance, laboratory testing, and response, in addition to coordination with multiple external partners (Optional Activities)*
- *Additional Hurricane Funding Availability for Puerto Rico, Florida, South Carolina, and North Carolina Applicants must clearly indicate in both their applications and budgets which proposed activities will be supported with this funding versus ELC Program A: Cross-Cutting Epidemiology and Laboratory Capacity.*

Strategy 0) **Strategy to Address Required Tasks**

a) Address Required Tasks in program guidance

The Required Tasks are required by all funding recipients. Selecting this optional activity simply allows applicants to describe an implementation plan and link budget line items to complete the Required Tasks. If applicable, jurisdictions should link travel costs for Vector Week to this activity. If completion of

a Required Task is fully described in another activity section, applicants **do not** need to restate that information here.

- *Required tasks include maintaining communication with DVBD including a BP1 kick off call, hiring and training staff and reporting of results to appropriate surveillance networks such as ArboNet or ArboNet Tick Module. Travel funds to Vector Week (held bi-annually) should be included here.*

Area A: Surveillance, Detection, and Response

1) **Improved ecological and vector surveillance, response, and reporting.**
   Basic Capacity:
   a) Collect and report **passive** ecologic surveillance data already being collected

- *Coordinate with partners in your jurisdiction to ensure surveillance data being captured is shared with local vector control programs and reported to ArboNet. If data collection and reporting is an activity managed by lab staff, funding can be requested to support salary related to that function.*

Enhanced Capacity:

a) Conduct/coordinate **active** ecologic/vector surveillance and vector pathogen testing

- *If data collection and reporting is an activity managed by lab staff, funding can be requested to support salary related to that function.*

4) Strengthen human laboratory testing for vector-borne diseases of relevance.
Basic Capacity
*Maintain core capacity to perform **human diagnostic** testing for vector-borne diseases*
Participate in annual proficiency testing for human vector-borne disease diagnostics

- *Laboratories should request funding for staff typically supported under this activity to maintain basic testing capacity for endemic vector-borne diseases significant to their jurisdiction. At least 0.5 FTE is recommended.*
- *Laboratories should request funds for reagents to provide molecular and serologic testing for at least one vector-borne disease but are encouraged to maintain testing for more vector-borne diseases. Funds can be requested funding for equipment (including service/maintenance), consumables and reagents not provided by CDC. It is important to ensure the supply budget matches the expected number of tests that are planned.*
- *Laboratories should participate in annual proficiency testing for vector-borne disease diagnostic testing.*

Enhanced Capacity:
Enhanced capacity for human diagnostic testing

- *Laboratories applying for enhanced activities should plan to maintain broader capacity to detect and respond to an expanded number of jurisdictionally significant imported and travel-associated vector-borne diseases. This can include arboviral panels, additional real time assays or IFA IgG for Rickettsia, Ehrlichia and Anaplasma species.*

Provide support to other states and jurisdictions for vector-borne disease diagnostics

- *Laboratories should consider performing testing for laboratories in their region. Funds should be requested to support additional testing due to a broader test menu or for offering testing support to neighboring laboratories. Funds can be requested to support the additional staff needed to conduct the increased testing and coordination as well as costs for reagents and supplies.*

5) **Enhance workforce capacity for VBD surveillance and response.**
Enhanced Capacity:
b) Workforce training on vector-borne diseases

- *Funds can be requested to support travel to training courses and workshops offered by CDC, APHL, Vectorborne Centers of Excellence (COEs) and Technical and Evaluation Centers (TECs) or 1:1 training in a neighboring jurisdiction.*

6) **Hurricane Fiona and Ian Recovery (Florida, North Carolina, Puerto Rico, South Carolina only).**
c) Surge support of diagnostic testing

- *Laboratories in states who submitted disaster declarations in response to hurricanes Fiona and Ian (i.e. Florida, Puerto Rico, North Carolina, and South Carolina) are eligible to apply for additional funds to support surveillance of mosquitos and mosquito-borne diseases. Funds should be requested to support additional surge testing following significant rainfall or to provide support to labs with reduced capacity due to damage sustained from natural disasters. It must be clearly indicated in both the application and budget which proposed activities will be supported with this funding versus ELC Program A: Cross-Cutting Epidemiology and Laboratory Capacity.*

Section III: Disease-Specific Projects

Project L: Prion Surveillance (p. 216-222)

There is no laboratory funding associated with this project.

Project M: Mycotics: Detecting and Preventing Fungal Infections (p. 223-230)

Estimated Number of awards is 40;
Estimate 15 awards up to $10,000
Estimate 10 awards of $10,000-$25,000
Estimate 10 awards of $25,000-$50,000
Estimate 5 awards of more than $50,000

Area A: Surveillance, Detection, and Response

3) Enhance laboratory testing for surveillance and reporting
a) Establish or enhance fungal testing capacity. Priorities include developing capacity to perform (1) MALDI-ToF to identify pathogenic molds and dimorphic fungi and (2) testing for endemic mycoses.
b) Conduct environmental sampling for fungal pathogens to inform public health measures.

- *Maintain staff, reagents, supplies and equipment to identify pathogenic yeasts and molds from clinical and environmental samples using MALDI-ToF technologies. Funds can be requested to support the purchase of MALDI-ToF libraries and reagents and supplies needed for validation.*

4) Enhance workforce capacity

a) Recipients are encouraged to apply under this activity to send laboratory personnel to participate in MDB training opportunities to improve laboratory detection of fungal infections.

- *Consider requesting funds for travel to the Laboratory Identification of Pathogenic Mold workshop or for staff to travel to CDC or a neighboring public health laboratory for 1:1 training.*

Area C: Communication, Coordination, and Partnerships

6) Enhance communication, promote coordination, and develop partnerships

- *Maintain communication with other laboratory sections performing mycotics diagnostics and surveillance activities including section I, AR Laboratory Network.*

Project N: Binational Border Infectious Disease Surveillance (BIDS) (p.231-240)

There is no laboratory funding associated with this project.

Project O: Global Migration, Border Interventions, and Migrant Health (p. 241-245)

There is no laboratory funding associated with this project.

Project P *:* Parasitic Diseases Surveillance (p. 246-250)

Tier I – Improvements in diagnostic testing for parasitic diseases
Approximate number of awards is 7; approximate average award is $12,000

Tier II – Genotyping of parasites of public health importance
Approximate number of awards is 4; approximate average award is $80,000

- *All available funding is dedicated to laboratory testing. All public health laboratories are eligible to apply.*

Area A: Surveillance, Detection, and Response

Tier I: Improvements in diagnostic testing for parasitic diseases.

1) Strategy: Expand the number of assays for parasitic disease diagnosis offered at PHLs (Tier I)

- *Funds should be requested to purchase and fully validate and implement available FDA-cleared in-vitro diagnostic assays for Leishmaniasis and Trichinellosis from clinical specimens. Funded laboratories are expected to provide testing to other PHLs (Following PulseNet Regions).*

2) Strategy: Expand the use of telediagnosis for morphology parasite identification (Tier 1)

- *Awarded labs will be expected to implement or increase the submission of digital images submitted for telediagnosis of parasites. PHLs may request funds to update microscopes or cameras; to maintain or train parasitologists/microscopists in morphological diagnosis and imaging. Funds/activities may also focus on assisting primary submitters with ensuring appropriate CDC processes for ordering and accessing telediagnosis services.*

3) Strategy: Increase the number of specimens successfully accessioned at CDC (Tier I)

Awarded laboratories should work with CDC and submitters in their jurisdiction to improve specimen submissions and reduce the specimen rejection rate. PHLs may request funds to meet CDC specimen acceptance criteria including appropriate storage conditions (i.e. -20°C freezers) and successful applications will describe a strategy for coordination and communication with local submitters to reduce the time between collection and receipt of specimens at CDC.

Tier II: Genotyping of parasites of public health importance

4) Strategy: Increase PHL capacity to genotype parasitic agents associated with outbreaks, initially focused on *Cyclospora cayetanensis* and malaria (Tier II)

- *Awarded labs will be expected to implement targeted amplification and next-generation sequencing of C. cayentanensis and malaria from clinical specimens (stool and whole blood, respectively) and to submit sequences to the CDC. PHLs may request funds associated with this effort: consider the costs of reagents, supplies, and equipment to implement or continue amplicon-based multilocus sequence typing methods to provide genotyping information for Cyclospora cayetanensis. Funding may be considered regionally to align with the seven PulseNet regions. Labs may not have a high incidence of both Cyclospora cayetanensis and malaria, but in-house capacity will be important for both.*

5) Address parasitic disease diagnostic needs that are unique for specific PHLs
Though this is listed as a Tier II strategy, applicants should request funding to meet specific jurisdictional needs whether they are diagnostic or for genomic surveillance. If a jurisdiction has a high incidence of a parasitic disease and would benefit from funding to support detection and response, that should be described in this section. Ensure the proposal aligns with the requested budget.

Area C: Communication, Coordination, and Partnerships

Tier I:

5) Expand parasitic disease testing capacity by supporting other PHL (Tier I)
If funded, laboratories are expected to support neighboring states by providing parasitic disease diagnostic testing as requested.

Tier II:

7) Increase PHL capacity to genotype parasitic agents associated with outbreaks, initially focused on *Cyclospora cayetanensis* and malaria (Tier II)
If funded, laboratories are expected to provide surge capacity testing as needed to neighboring states during outbreaks.

Project Q: Combating Antimicrobial Resistant Gonorrhea and Other STIs (CARGOS) (p. 251-263)

Estimated number of awards is 20; Estimated average award of $650,000 (range $400,000-$770,000)

Important change from last year: Activities previously proposed under Project S (SURRG) and Project T (GISP) have been combined in Project Q (CARGOS). The set of activities has also been expanded to include additional specimen types, test methods and target organisms.

- *All public health laboratories are eligible to apply. Competitive applications will be those that can demonstrate a strong track-record and existing capacity to address the activities listed in the NOFO.*

- *Applicants should ask for the personnel, travel, trainings, reagents, supplies and equipment required to address the testing described in the NOFO. Requests for diagnostic testing reagents (e.g.: diagnostic NAATs) are not appropriate.*
- *Public health laboratories should collaborate with jurisdictional STD prevention and surveillance programs during the application process. Public health laboratories should contribute to applications by describing current capability and capacity to perform gonorrhea culture and susceptibility testing, ability or willingness to validate additional specimen types, methods, or approaches as well as any current collaborations with clinical laboratories and providers, current data collection, reporting and storage mechanisms and strategies for expanding capacity if necessary.*
- *Ensure that applications for Project Q address the required specimen types. As there may be overlap between the testing methodologies associated with Project Q and those previously funded via SHARP or requested in Program I (AR Lab Network), laboratories should detail differences in the specimen types and/or populations that will be tested using funds from the applicable Program or Project areas. The intent is to eliminate duplicative requests and ensure that funds are utilized for the appropriate activities.*
- *Applicants are encouraged to provide detailed budgets. For example, rather than grouping items into laboratory supplies it is recommended to list out the laboratory supplies that would be required such as number of plates, swabs, etc.*
- *Optional activities address STI pathogens with emerging antimicrobial resistance. Laboratories interested in these activities should request the funds required to complete the proposed work, however activities directed toward Neisseria gonorrhoeae should be prioritized.*

Project R: Rabies Surveillance and Laboratory Capacity (p. 264-268)

Estimated number of awards is 20; Estimated average award of $10,000

Area A: Surveillance, Detection, and Response

1. Enhance laboratory testing for surveillance and reporting.

    - *It is expected that funded laboratories will maintain the necessary equipment and supplies to conduct rabies testing in accordance with the National Standard Protocol in their jurisdiction.*
    - *Ensure equipment used in DFA is up to date. Consider upgrading fluorescence microscopes if needed.*
    - *Priority should be given to maintain staff qualifications and proficiency; recommendations can be found in the national standard protocol. This includes travel for attendance at national training course if they have not attended within the last 6 years.*
    - *Awards are limited and requests for training and maintaining DFA capability will be prioritized. However, laboratories may consider request reagents for implementation of the LN34 assay or another NAAT. APHL can assist with providing the LN34 protocol upon request.*

2. Enhance coordination between epi-lab-HIT.
    - *Review APHL ELC guidance language included under Attachment C: Health Information Systems Capacity for general Informatics guidance and additional information may be useful when developing ELC activities.*
    - *Consider requesting funds to deploy a new or upgrade/expand an existing animal Rabies LIMS module to facilitate data sharing.*

- *Complete mapping of Animal Rabies LIMS data to the HL7 2.5.1 Animal Rabies Message Mapping Template.*

3. Advance Electronic Information Exchange Implementation

- *Ensure transport mechanisms are in place to send data to APHL Informatics Messaging Services Platform, which will allow the CDC Rabies program to access PHL animal rabies data and replace current reporting mechanisms.*

Project T: Human Papillomavirus Surveillance Among Men (p. 281-285)

Estimated number of awards is 3; Estimated average award of $125,000

Area A: Surveillance, Detection, and Response

Surveillance and reporting of anal HPV prevalence among MSM

b) Obtain anal specimens from sexually active adult MSM (n=500 annually)

d) Coordinate submission of specimens and epidemiologic data to CDC

- *Coordinate with program staff in your jurisdiction and consider requesting funds to support maintaining packaging and shipping materials and costs associated with the transfer of specimens to CDC.*