March 10, 2025

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-CK24-0002CONT25), which was released on February 24, 2025. The NOFO solicits applications for Budget Period 2 (August 1, 2025-July 31, 2026). The application must be submitted by 3:00 PM ET on April 25, 2025**.**

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,

Scott J. Becker

Scott Becker, MS
Executive Director

APHL Staff Contacts

Subject Area	Staff Contact	Email	Telephone
Infectious Diseases	**Kelly Wroblewski**	**kelly.wroblewski@aphl.org**	**240-485-2728**
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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 fast Dx which, as of December 2022, is no longer being sold. The ABI 7500 fast Dx will continue to be supported through 2029. Refer to this summary report for information on platforms under consideration. CDC's Influenza Division and LRN-B are actively evaluating performance of CDC assays on the ThermoFisher Scientific Applied Biosystems QuantStudioTM 7 Pro Real-Time PCR System, the ThermoFisher Scientific Applied Biosystems QuantStudio™ 5 Dx Real-Time PCR System and BioRad CFX™ Opus 96 Dx System/CFX™ Opus 384 Dx System.*
- *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.*
- *A summary of changes from Budget Period 1 to Budget Period 2 has been provided on pages 11-16 of the NOFO.*
- *Please note: A minimum of one (1) success story submission is required as part of the BP2 Continuation Application (page 8)*

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. 17-24)

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 Activity 1c or Activity 1d (peer-to-peer visits) 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 and/or support infectious disease testing across ELC funded areas.*
  - *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 multiple pathogens. This can also be included in Strategy 10. Some recipients may find it appropriate to utilize existing COVID funds from CK19-1904 for this purpose as well (i.e., ED/EDE).*
  - *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 purchase new thermocyclers in the coming years as the ABI 7500 Fast Dx will no longer be supported by ThermoFisher in 2029. Some recipients may find it appropriate to utilize existing COVID funds from CK19-1904 for this purpose (i.e., ED/EDE).*
  - *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. Some recipients may find it appropriate to utilize existing COVID funds from CK19-1904 for this purpose (i.e., ED/EDE).*
  - *APHL maintains a list of manufacturer discounts for public health on our website: Public Health Pricing List.*
  - *The Laboratory Capacity Assessment in ELC CAMP is due to be updated by the end of Q2.*
  - *While funding may not be available to support covering the following items, please consider including them in your application to demonstrate ongoing need:*
    - *Maintenance and service agreements*
    - *Staff such as biosafety officers, quality managers or specimen processing staff*

5) Improve efficiency of laboratory operations

- *A mitigation plan for findings discovered in the BP1 gap analysis is to be developed.*
- *A gap analysis on a process not covered in BP1may be conducted but is optional.*
- *APHL will continue to 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), focusing the analysis on a subset of laboratories in your region and/or utilizing APHL's PHL Systems Database to identify potential testing partners in neighboring jurisdictions.*
- *Consider requesting funds for staff time to conduct the assessment.*

Project B: ELC Leadership, Management, and Administration (p. 25-30)

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)

Travel support for the 2026 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 daily contact 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. 31-52)

65 awards; average of $338,000 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 and network administrators*
- *Ensure access to CDC Specimen Test Order and Reporting (CSTOR) web portal for at least two representatives from the laboratory*
- *Please show how you are splitting funding up across ELC and other sources of funding such as Public Health Emergency Preparedness (PHEP) Cooperative Agreement 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)*
  - *Active Performance measures PM.12 and PM.13 are important measures tied to the PH data strategy and helps to show progress*

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 2026 ELC Annual meeting in Atlanta.*
  - *2026 APHL Annual Meeting*
  - *NACCHO 360*
  - *The Public Health Informatics, Surveillance, and IT Conference (PHI*con) https://virtualcommunities.naccho.org/2024phicon/2026-phicon*
  - *Council of State and Territorial Epidemiologists (CSTE) Annual Meeting*
  - *LOINC Laboratory Conference*
  - *American Health Information Management Association (AHIMA) Health Data and Information Conference*
  - *Healthcare Information and Management Systems Society (HIMSS) Annual Conference & Exhibition:*
- *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://camp.cdc.gov/s/login/?ec=302&startURL=%2Fs%2F*

- ***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:*
    - *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 Area A, PM.6 and PI.11, Program J for PHLIP reporting activities.*

- *PHLs must report to at least two CDC-sponsored laboratory networks. APHL Technical Assistance is available to support message implementation, updates, enhancements and data transport efforts for PHLIP (see above), AR Lab Network DAART, and Rabies laboratory reporting to CDC. Contact the Informatics Help Desk at informatics.support@aphl.org to request technical assistance for the following:*
    - ***Antimicrobial Resistance Laboratory Network (AR Lab Network)****: Plan to implement new and sustain existing AR Lab Network results reporting to CDC. PHLs who currently report via CSV should prioritize migrating 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 informatics activities under Area C, Program I.*
    - ***Animal Rabies ELR****: Please request technical assistance to support the electronic submission of rabies laboratory data to CDC. Refer to Rabies informatics activities under Area A, Project R.*

- *APHL hosts Laboratory User Groups for StarLIMS, Horizon/Clinisys LIMS, and Rhapsody. These user groups allow public health laboratory informaticians to connect and share knowledge on these systems. Laboratory staff can join these groups by filling out the online form here: https://app.smartsheet.com/b/form/49d69cec198e47a39b82e82324ad99b8*

- *Consider allocating 10-20% of a leadership staff position to monitor new rules, regulations and standards that have an impact on informatics, system and infrastructure requirements and data exchange. This time would include participation in policy-related workgroups; reviewing and commenting on draft rules from CMS, CDC, ASTP, FDA and other federal agencies; and liaising with APHL, CSTE and the Joint Public Health Informatics Task Force (JPHIT) and other associations that advocate for robust and sustainable public health policies and standards.*

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. See ETOR-specific activities in Activity 9.*
- *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 LIMS 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 low-volume or infrequent submitters 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 laboratory tests and retrieval of discrete 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 adopt an ETOR Intermediary solution such as Detor on the AIMS Platform, 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 utilizing the Detor 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. This role conducts outreach to data exchange partners to expand onboarding and implementation.*

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

AR Lab Network ETOR Web Portal

*This newly added activity applies only for Antimicrobial Resistance (AR) Laboratory Network Regional Labs. AR Lab Network Regional Labs are **strongly encouraged** to continue to apply for AR Lab Network ETOR web portal funding under Program I, activity 16b. In future budget periods, AR Lab Network Regional Labs may consider consolidating ETOR Web Portal funding under Project C.*

Project D: Advanced Molecular Detection (AMD) (p. 53-61)

Total funds $6,000,000, 65 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 $300,000-$500,000 per award based on demonstrated need*
  - ***NEW: Additional training lead applications can include Regional Genomic Epidemiology Training Lead with approximate 7 awards, average $75,000 to $150,000.***
  - *Training Participant: approximately 65 awards to attend regional training, average of $3,000-$10,000 per award based on demonstrated need to attend regional training. National conference/workshop attendance with approximately 30 awards for up to 2 staff per award, with approximate average award $5,000.*
- *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, or 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.*
- ***NEW: OAMD has added a component for the potential of 7 genomic epidemiology training leads and support for up to 0.5 FTE. The addition of this activity is in recognition of the ongoing genomic epidemiology training work that the AMD Training leads have begun with the goal of expanding this type of training and assistance. This training should be connected with the work of the AMD training lead work plan.***
- *Request resources needed for training, including licenses for Zoom, laboratory and reagent supplies for wet-bench training, computing and software needs for training, etc.*
- ***NEW: Laboratories can request for instructional design resources.***
- *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.*
- *Request funds for staff time to conduct the needs assessments and training.* ***NEW: This needs assessment may be done in collaboration with other AMD training leads and regional resources across the country***
- *OAMD may consider funding multiple training leads per region.*
- ***NEW: If a training lead proposes using an external resource such as an academic or industry partner for training, the lead should make clear on their work plan how they will direct and lead the training, while using the partner as support. More information about how recipients can utilize academic and industry partners on p.58 in the ELC guidance.***
- *AMD follows the PulseNet Regional Map: Participants | PulseNet USA | CDC*

AMD Training Participant:

- ***NEW*: Separate training requests between AMD Regional training and AMD -related conferences and workshops. AMD regional training includes participation in one of the trainings held by the AMD training leads. You may request funding to attend a training outside of your region, however, it would still need to be hosted by an AMD regional training lead. Funding priority will be given to AMD regional training requests and funding for AMD-related requests must be IN ADDITION to the requests for AMD regional training.**
- *The upper limit of funding request is in recognition of the states and territories that are not part of the contiguous United States may require higher costs for travel.*
- *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.*

AMD Bioinformatics Regional Resource (BRR):

- *Applicants can apply to be an AMD bioinformatics regional resource to provide technical support and assistance to their region.*
- ***NEW: This year additional language around competencies and potential job titles for these roles were included. The job titles are not restrictive but do include information in your proposal how you meet the proposed competencies listed.***
- *Applicants should plan to work with the AMD Regional Training Lead to perform an annual needs assessment to determine the needs of the region.* ***NEW: This needs assessment may be done in collaboration with other AMD training leads and regional resources across the country.***
- *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 will not 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.* ***NEW: If you do plan to move personnel from the supplemental awards to Project D, please specify in your budget justification which award***

the staff person is already funded through (if applicable) and the plan is to move them over for a certain level of effort to Project D.

- *Funding from AMD Sequencing and Analytics 1 and construction funding is extended through July 31, 2026.*

Project E: National Wastewater Surveillance System (p. 62-72)

65 awards; average of $500,000 per award

- *Jurisdictions that did not apply for NWSS BP1 funds are eligible to apply for BP2 funds.*
- *The BP2 Continuation Application increases the number of awards from 20 to 65 and the average amount per award from $300,000 to $500,000. Apply for the maximum funding your jurisdiction needs to create a wastewater surveillance program that provides optimal public health protection. This can be greater than $500,000 and can include allocating funds to scale programs when needed.*
- *For BP2, the only required pathogen to conduct epidemiologic surveillance for is SARS-CoV-2. Pathogens of high priority beyond SARS-CoV-2 include Influenza A and its subtypes, Influenza B, RSV, and mpox (non-variola orthopox, Clade I, Clade II). Conducting surveillance for these and other pathogens based on the recipient's interest is encouraged. Sequencing for SARS-CoV-2 and other pathogen targets is encouraged but optional.*
    - *Two new optional sequencing activities are Metadata Completeness (4c) and Data Timeliness (4d).*
- *One of the new required Workforce Capacity tasks is to identify one or more laboratory points of contact for wastewater testing.*
- *APHL WWS program implementation resources include:*
    - *SARS-CoV-2 Wastewater Surveillance Testing Guide for Public Health Laboratories*
    - *National Trends in Wastewater Surveillance: 2023 Survey Report*

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, sample collection, planning and implementing laboratory workflows (inclusive of equipment and supplies), data reporting, and coordinating & partnering to optimize national wastewater surveillance.*

Tier 2: National Wastewater Surveillance System Centers of Excellence (NWSS CoEs):

- ***National Wastewater Surveillance System Centers of Excellence (NWSS CoEs):*** *CDC-required activities for CoE funding is to enhance workforce capacity, develop surveillance metrics, transfer knowledge, evaluate laboratory workflows, determine effective scales of WWS, enhance public health communication, and improve wastewater utility data collection and sharing. Evaluating laboratory workflows includes improving current target organisms to improve data quality, assay sensitivity and inter-lab comparability and conducting pilot implementation of laboratory methods under consideration for inclusion in core NWSS surveillance testing. NWSS CoE activities should not be research-based. 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.*

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 cover the staff needed to fully support NWSS activities. Administrative support costs will also be considered.*
- *Consider including travel funds for scientists to attend the annual NWSS summit, technical trainings, peer-to-peer visits, and other wastewater surveillance and laboratory conferences.*
- *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.*
- *Samples:*
    - *Request funds to support utility and other partners through stipends and contracts to ensure the safe collection and transport of samples to the testing laboratory. Funds to pay for sample couriers could be an option as well.*
    - *Consider materials required for proper transport and storage of samples, such as coolers, consumable materials, cold packs, thermometers and laboratory refrigerators. Sample processing equipment to consider purchasing could include a bar code scanner, label printers, etc.*
- *Consider equipment, supplies and consumables for processing wastewater samples. This will vary by method/workflow. The National Trends in Wastewater Surveillance: 2023 Survey Report may be a resource to understand a variety of approaches.*
    - *Storage - laboratory refrigeration at 4° C*
    - *Sample homogenization (i.e., sonicators, mixers, bead bashers)*
    - *Sample clarification (i.e., filtration systems, centrifuges)*
    - *Sample concentration (i.e., nano beads, ultracentrifugation, membrane filtration, polyethylene (PEG) precipitation)*
    - *Sample extraction (i.e., automated extraction systems to increase throughput and extraction kits specific to your workflow)*
    - *Laboratory controls (matrix control, human fecal normalization, quantitative measurement controls, inhibition assessment and negative controls)*
    - *Detection and quantification: 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 select digital PCR platforms.*
    - *Consider applying to APHL fellowship and internship programs to supplement your laboratory workforce.*

b) Automated data transfer
- *APHL recommends collaboration with health department and informatics partners to assess instrument interface to the facility Laboratory Information Management System (LIMS) and from the LIMS to the DCIPHER portal.*
- *Considering funding needs for automating LIMS 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. Consider applying to APHL fellowship and internship programs to supplement this workforce as well.*

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

c) Metadata Completeness

d) Data Timeliness

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 equipment, supplies and consumables needed for implementation 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 and Water Environment Federation (WEF) Utility CoP calls 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 wastewater utilities 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. APHL fellowship and internship programs could be a resource.*

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

- *Work with wastewater utilities and 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 and/or flow meters).*

Project F: Emerging Issues (p. 73-76)

Funds will only be available in the event of a local or national infectious disease outbreak. All proposals should request $5,000,000 (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. 77-99)

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

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

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

Model practices for laboratory activities can be found via the PulseNet SP site, FoodCORE model practices, the CIFOR Guidelines for Foodborne Disease Outbreak Response and CIFOR Toolkit, and APHL.

2a) Improve laboratory activity coordination, workflows and information flow

- *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, at a FS Center of Excellence or at CDC.*
- *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.*
    - *Consider costs for implementing CIDT workflows (such as the Isolation and Identification of Salmonella Species in Public Health Laboratories) intended to isolate and identify key PulseNet pathogens from CIDT+ stool specimens as efficiently as possible.*
    - *Consider requesting support to measure cost savings after implementing the aforementioned workflows.*
- *Consider costs for implementing the Salmonella Highly Multiplexed Amplicon Sequencing (HMAS) protocol intended to provide a means of sequencing directly from stool specimens.*
    - *Current HMAS pilot sites should consider the costs needed to develop protocols for additional PulseNet pathogens, e.g., STEC.*
- *Request funding to enhance/maintain courier services for specimen transport from clinical laboratories to public health laboratories.*
- *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 certifications and proficiency tests required for PulseNet participation.*
- *Consider all costs to support validations, if required, for updated laboratory or analysis protocols*
- *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. Refer to PulseNet SharePoint site for SOPs on instrumentation and reagents kits supported by the PulseNet network and analysis of molecular subtyping data.*

NARMS

- *Costs to package and ship routine surveillance isolates to CDC for antimicrobial susceptibility testing (AST) based on the Enteric Disease Isolate Submission Table guidance* (*available upon request by emailing CDC at entericbacteria@cdc.gov*) and current guidance from CDC NARMS.
- *Per additional request from CDC, costs to rapidly package and ship outbreak and special study isolates to CDC for antimicrobial susceptibility testing (AST).*

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 Cryptosporidium positive clinical specimens to the CryptoNet Reference Laboratory at CDC for subtyping.*

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 discussing with jurisdictional partners setting up a more formalized environmental microbiology outbreak response program that provides funding and support for laboratory testing.*
- *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.*
- *Consider applying to APHL fellowship and internship programs to supplement your workforce.*
- *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:

- *Consider the costs to participate in monthly FoodCORE calls and program site visits.*
- *Consider the costs to implement model FoodCORE practices that improve laboratory activity coordination, workflows, and information flow (Model Practice: Laboratory Timeliness and Completeness) 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 per current PulseNet Standard Operating Procedures (SOPs) and protocols for whole genome sequencing (WGS).*
    - *conduct real-time testing/diagnostics of parasitic identification and calicivirus characterization*
    - *collect samples from persons with hepatitis A virus infection linked to a foodborne disease outbreak for molecular characterization.*
- *Report annual metrics in a timely and thorough manner*
- *Travel to attend the annual FoodCORE vision meeting and InFORM*
- *Contribute to FoodCORE success stories and model practices*

- *Assist with the operationalization of updated FoodCORE goals to advance FoodCORE program goals and priorities*

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 FoodNet pathogens from CIDT+ specimens as quickly and efficiently as possible*
    - *work with epidemiologists to link laboratory (e.g., WGS, species, serotype, etc.) and epidemiologic data for FoodNet cases*
    - *work with epidemiologists to prioritize sequencing of isolates with exposure and antimicrobial use*
    - *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.*
    - *store/preserve isolates for future characterization especially those with exposure and antimicrobial epidemiologic information*

Tier 2: NoroSTAT

Note: Laboratory requests for CaliciNet testing should primarily be included in the CaliciNet Tier 1 section. Additional areas to consider are included under NoroSTAT and NREVSS.

- *Ensure adequate personnel to:*
    - *sequence and report all laboratory-confirmed norovirus outbreaks to CaliciNet within 7 business days (10 days for NGS)*
    - *include a unique outbreak identifier in CaliciNet reports enabling linkage of those records with the appropriate NORS outbreak report*

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

- *Ensure adequate personnel to sequence and report all laboratory-confirmed norovirus samples to CaliciNet to improve sporadic enteric virus surveillance/testing. Refer to Project C for guidance on NREVSS reporting Technical Assistance.*

Tier 2: PulseNet Area Laboratories

a) Enhanced outbreak investigation response and reporting

- *Request funding to purchase reagents and supplies 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.*

Tier 2 PulseNet Area Lab: Enhance coordination among lab partners
a) Improve surveillance to drive public health action
- *same as above*

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: 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.*
- *Oxford Nanopore Technologies (ONT) project: For SPHLs already participating in the ONT 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. 100-110)

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. 111-141)

Notable changes to required tasks

- *Any test system that are indicated as CLIA-compliant must be implemented, at a minimum, in compliance with the Clinical Laboratory Improvement Amendments (CLIA) regulations for patient care. This was previously CLIA-validated in BP1.*
- *Participants should plan to travel to attend a biennial in-person Program I Participants meeting at CDC's Roybal campus on even years (i.e. 2026, 2028). While this is a required task, the next meeting will not occur in BP2, and applicants do not need to request travel funds at this time.*
- *Laboratories should ensure new and current staff are registered to the AR Lab Network SharePoint site and regularly review the contact list to ensure communications are sent to the appropriate staff.*
- *Antibiotic susceptibility testing (AST) is now defined by 3 programs – **Basic, Standard** and **Response**. Laboratories must select the program that is appropriate for their laboratory capacity and response priorities.*
    - ***Basic** – to confirm carbapenem resistance and rule out false positives suspected novel alert. Test all CRE, CRPA and CRAB isolates received, but testing is not required to be*

under CLIA, includes only carbapenem and cephem drug classes, and can be batched. Data will be reported to CDC only.

- ***Standard*** *– includes testing performed in the Basic program plus a subset of CPOs and non-CPOs; CDC will provide guidance on what isolates encompass this subset. The purpose is to monitor phenotypic profiles of circulating resistant phenotypes and test newer beta-lactam/beta-lactamase inhibitors. The testing is not required to be under CLIA and can be batched. Data will be reported to CDC only.*
- ***Response*** *– includes testing performed in the Standard program, with additional CLIA-compliant testing on all CRE, CRPA and CRAB isolates received for clinical treatment purposes; testing for patient care must have a turnaround time of 3 days or less. Data will be reported to CDC and the submitter.*
  - *Regional laboratories should apply for the Response Program and will also test suspected pan-R isolates from their region.*
  - *Non-regional laboratories who apply for the Response Program will test suspected pan-R isolates from their jurisdiction.*

Tier 1: Basic Funding; all activities required for all applicants. Approximately 57 awards, $48,000 approximate average award

- *All activities under Tier 1 are required for all applicants.*
- *Include requests and delineate funds for personnel, equipment, laboratory reagents and supplies, contractual support and/or support.*
  - *Note continuing positions and any changes from previous years.*
- *Shipping costs for the AR Lab Network are funded. If funding is needed for courier services, provide details and justification.*
- *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. Laboratories should utilize these funds in addition ELC core funding and de-prioritize optional activities to support required AR Lab Network testing activities.*

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

- *Tier 2 activities are all optional. PHLs are encouraged to apply for Tier 2 activities only if needed and feasible, and must apply for Tier 1 activities as well. If applying, PHLs should consider applying for the activities for which there already exists laboratory capacity and needed resources, such as testing platforms, as well as defining the purpose of the testing.*
- *Regional laboratories **must** apply for Tier 2 activities that is intended to be done for their state; Tier 3 activities are for the whole region, whereas Tier 2 allocations are specific to their own jurisdiction.*
- *Include requests and delineate funds for personnel, equipment, laboratory reagents and supplies, contractual support and/or support.*

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, 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.*

- *All activities except those under Strategy 6 and Strategy 10 are required. CDC will give preference to laboratories that describe advanced existing capacity for required and optional activities. If applying for optional activities, provide justification on why it is needed and if it is feasible.*
- *When applying, regional laboratories should identify what percentage of testing will be for their own jurisdiction and what percentage will be for the region.*
- *Include requests and delineate funds for personnel, equipment, laboratory reagents and supplies, contractual support and/or support.*

National TB Molecular Surveillance Center: Up to 5 awards across Tier 2 (n=4) and Tier 3 (n=1), estimated total awards of $1,800,000.

- *NEW Tier 2 activity: Mycobacterium tuberculosis WGS. Up to 4 awards, average award varies with testing volume (up to $100 per isolate). PHLs in states with > 400 cases of TB in 2023 are eligible to apply. Awardees will conduct WGS for M. tuberculosis isolates from culture positive tuberculosis (TB) cases within their jurisdictions using any Illumina sequencer and v3 chemistry. By the end of budget period 2, the WGS method must be CLIA-compliant so that results can be used to predict drug resistance.*
- *Tier 3 activity: CDC will fund 1 National TB Molecular Surveillance Center that will perform WGS for M. tuberculosis isolates from culture positive tuberculosis (TB) cases inside AND outside of their jurisdictions. Implementation of CLIA-compliant testing for drug resistance prediction of M. tuberculosis and implementation of electronic test ordering and resulting of data were previously optional activities and are now required. The NextSeq is the preferred sequencing platform.*
- *Laboratories do not need to apply for both Tier 2 and Tier 3 activities, but they could.*
- *APHL works with CDC to fund the National TB Drug Susceptibility Testing Reference Center, which is separate from the work described here. PHLs that are eligible to submit specimens to the National TB Drug Susceptibility Testing Reference Center will continue to do so.*

Area A: Surveillance, Detection, and Response

Tier 1 activities are required for all recipients applying for AR Lab Network funding.
Tier 2 activities are optional enhanced laboratory capacity activities intended for all laboratories. Regional laboratories must apply for Tier 2 activities that are intended to be done for their jurisdiction.
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.

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

- *Activity 1b (carbapenemase production testing, pg. 117) used to be part of Activity 1a but is now its own activity.*
- *Laboratories must select the Basic, Standard or Response AST program for activity 1d (AST, pg. 118); regional laboratories should select the Response program. Laboratories should discuss proposed program with the HAI/AR epidemiologists to determine which program will suit their response need. If additional drugs will be added to the testing directory, include cost for validation or verification of drugs in application. Refer to the January 15, 2025 HAI Activities Call recording on the AR Lab Network SharePoint for more information.*
- *Laboratories must submit organism identification data for yeast (activity 1e, pg. 118) to CDC via REDCap at least monthly or per CDC guidance. Labs should work with CDC towards HL7 reporting for all AR Lab Network testing.*

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.*
    - *Activity 2a.iv (pg. 119) is a new requirement under the Quality Management System activity.*

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

- *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.*
- *Activity 3e (WGS for M. tuberculosis, pg. 121) is a new activity. Laboratories who apply should be clear on the cost per test and number of specimens they intend to test.*

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

- *Activities 4a-4e (pg. 122-123) are required for the regional laboratories. Continue to request funds to maintain and sustain capacity for activities.*
- *Activity 4b (AST, pg. 122) was previously included in activity 4a but is now a separate activity for clarity. Regional laboratories must use the AST Response program.*

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

- *Activities 5a-5c (pg. 123-124) are required for the regional laboratories. Continue to request funds to maintain and sustain capacity for activities.*

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

- *Activities 6a-6i (pg. 125-129) are optional for regional laboratories. If applying, describe any existing capacity to support the testing activity and justification as to why the testing is needed and feasible.*
- *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.*
- *Activity 6i (National Colonization Screening for VRSA and VRE, pg. 129) was part of Tier 3 required activity 9a in BP1 but is now a separate activity for clarity.*

Implement or maintain additional laboratory capacity (National TB Molecular Surveillance Center) (Tier 3)

- *Applying to be the National TB Molecular Surveillance Center is optional, but some activities in Strategy 7 are required for applicants.*
- *Public Health Laboratories interested in applying to be the National TB Molecular Surveillance Center must be able to perform prospective WGS for up to of 8,000 isolates per year, preferably with the NextSeq sequencer. Applicants are also required to maintain Mtb sample inventory system.*
- *Activities 7c and 7d (pg. 130) were previously optional activities in BP1 but are now required.*

Area B: Prevention and Intervention

Tier 2 activities are optional enhanced laboratory capacity activities intended for all laboratories. Regional laboratories must apply for Tier 2 activities that are intended to be done for their jurisdiction.
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)

- *Activity 8b (CPO Colonization Screening, pg. 131) was originally introduced via SHARP. It is a new activity under ELC to provide laboratories more flexibility.*
- *If this will be the first time applying for colonization screening activities (activity 8a and 8b, pg. 131), consider supplies, reagents, equipment and personnel when developing proposals. In addition to testing, PHLs should consider staffing needs to support outreach and coordination activities and informatics requirements. 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, for C. auris colonization screening (activity 8a).*

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

- *Activity 9a (Support State-led Investigations, pg.132) is required for the regional laboratories. Continue to request funds to maintain and sustain capacity for activities.*
- *Activity 9a (pg. 132) combines activities 9a (CPO) and 9b (C. auris) from BP1. Laboratories should be very descriptive in their requests, such as cost per test, number of anticipated specimens and delineate CPO and C. auris screening.*

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. 133) 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. 133) 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.*
- *Activity 11a (AR Lab Coordinator, pg. 135) was originally introduced via SHARP. It is a new activity under ELC to provide laboratories more flexibility.*

Improve laboratory and epidemiology coordination and outreach (Tier 1)

- *For Activities 12a-e (pg. 136), 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 and academic partnerships.*
- *Activity 12f (Timely reporting, pg. 137) is a new requirement under lab/epi coordination and outreach.*

Advance electronic information exchange implementation (Tier 1)

- *PHLS should plan to work closely with CDC and APHL to implement new or sustain data requirements. Please include staff time for these activities.*
- *PHLs that are submitting CSV reports to CDC should prioritize migrating reporting to HL7 messaging. Funding requests should include staff time for implementation and ongoing monitoring, vendor support, and system updates needed to complete the HL7 migration.*

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

- *Activity 14a (Train Personnel, pg.138) is required for the regional laboratories. Funding requests should consider supplies, reagents and personnel needed for training. Regional laboratories are encouraged to include funding for travel to assist other laboratories in their region with training.*

Improve laboratory and epidemiology coordination and outreach (Tier 3)

- *Activities 15a-b (pg.138) are required for the regional laboratories. Regional laboratories should demonstrate existing collaboration and communication channels with CDC and state HAI/AR 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 new reporting or sustain current data reporting requirements. Please include staff time for these activities.*
- *Tier 3 laboratories are **strongly encouraged** to continue to apply for AR Laboratory Network ETOR web portal funding under Program I, activity 16b. In future budget periods, Tier 3 laboratories may consider consolidating ETOR Web Portal funding under Project C.*

Program J: Enhanced Surveillance for Vaccine-Preventable Disease (VPD) and Respiratory Diseases (p. 142-171)

- *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 particularly for respiratory viruses.*
- *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, RSV and other respiratory virus testing.*
- *As most reagents and many consumables used for influenza testing are provided by the International 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 specimen collection and packaging and shipping supplies and/or implementing a courier network to increase specimen submissions to your laboratory. Do NOT describe these items as submitter incentives. Submitter incentives are unlikely to be funded.*
- *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

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 consider requesting funding for at least a 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.*

** For PCR specifically, note that there are several LDT protocols publicly available. Laboratories should consider including 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 participate in the Environmental Legionella Isolation Techniques Evaluation (ELITE) program or receive accreditation, consider budgeting for associated expenses.*

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

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. 172-184)

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.*
- *A National Public Health Strategy to Prevent and Control Vector-Borne Diseases in People has been published here.*
- *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)*
- *Required tasks include maintaining communication with DVBD including a BP2 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 the ELC annual meeting and Vector Week (held bi-annually) should be included here.*

Area A: Surveillance, Detection, and Response

2) **Improved ecological and vector surveillance, response, and reporting.**
   Basic Capacity:

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:
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:
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.*

Section III: Disease-Specific Projects

Project L: Prion Surveillance (p. 185-191)

There is no laboratory funding associated with this project.

Project M: Mycotics: Detecting and Preventing Fungal Infections (p. 192-199)

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

- *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

- *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.200-207)

There is no laboratory funding associated with this project.

Project O: Global Migration, Border Interventions, and Migrant Health (p. 207)

Not supported

Project P *:* Parasitic Diseases Surveillance (p. 208-210)

Approximate number of awards is 0; approximate average award is $0

- *Funding for Project P is not currently anticipated, however public health laboratories could consider applying in the event funds become available later.*

Area A: Surveillance, Detection, and Response

Improvements in diagnostic testing for parasitic diseases.

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

- *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

- *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

- *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.*

4) Address parasitic disease diagnostic needs that are unique for specific PHLs

- *Funding can be requested to meet specific jurisdictional needs. 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 supporting sero-diagnosis of trichinosis and leishmaniasis as requested.

Project Q: Combating Antimicrobial Resistant Gonorrhea and Other STIs (CARGOS) (p. 211-221)

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

- *Applicants should ask for the personnel, travel, trainings, reagents, IT, supplies and equipment required to address all aspects of the testing described in the NOFO, this includes requests related to specimen collection and local shipping. Requests for diagnostic testing reagents (e.g.: diagnostic NAATs) and shipping to DSTDP or the ARLN regional laboratory 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.*

Project R: Rabies Surveillance and Laboratory Capacity (p. 222-226)

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, technical assistance options and additional information that 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 legacy reporting mechanisms.*

Project T: Human Papillomavirus Surveillance Among Men (p. 238-242)

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.*