Appendix D: Infectious Diseases

Focus Area Name
Infectious Diseases

Focus Area Contact Information
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Approximate Average Annual Award: $11,200,000

Funding Opportunity Description

1. **Background**
   Infectious diseases remain an important public health problem both globally and in the United States. Public health laboratories (PHLs) work closely with their program and epidemiology counterparts to develop and improve strategies for disease detection, control and prevention, many of which include sustaining and constantly improving specialized testing capabilities. One challenge for PHLs is ensuring access to the many varied infectious disease testing services that share infrastructure in the form of equipment, staffing, disease reporting and close linkage with epidemiology, but at the same time supporting the unique strategies needed for different programmatic approaches. The specialized testing services for diseases such as Influenza, tuberculosis (TB), HIV, enteric diseases, sexually transmitted infections (STIs), Viral Hepatitis, antibiotic-resistant (AR) infections, and vaccine-preventable diseases (VPD) often share the same testing platforms. However, they may differ in the programmatic priorities related to surveillance strategies (e.g., "right sizing" for Influenza), coordination with clinical laboratories for rapid referral and confirmation (e.g., TB), and ensuring access to low-volume testing services related to sporadic focused outbreaks (e.g., VPD). PHLs must sustain and strengthen these specialized services in an environment of funding constraints, changes in technology, and shifts in workforce expertise.

   Control of infectious disease in the United States also involves both public and clinical laboratories with coordination of different levels of service for screening, detection, referral, and confirmatory testing. This partnership requires a PHL leadership role for continual outreach and communication with the clinical laboratories that serve as sentinel laboratories for suspecting and referring specimens for infectious disease testing. Without excellent coordination and communication between public and private sector laboratories, diagnosis and treatment of patients and steps to interrupt disease transmission may be delayed.

   Access to specialized public health testing is increasingly provided through establishment of regional networks, designated referral centers, and test sharing between state and local PHLs. Therefore, the individual PHL must establish mechanisms and relationships to ensure access to testing services through participation in these networks as either a receiving or referring laboratory. Effective interstate referral of samples for testing will require further

evaluation and strengthening of legal agreements (e.g., MOUs), communications, and electronic test ordering and result (ETOR) reporting capability between state PHLs.

The nation's PHLs are an invaluable platform for new testing services with capabilities to rapidly adopt methods for new emerging diseases such as MERs-CoV, Chikungunya, and *Candida auris* infections. PHLs are continually implementing new technologies and are tasked with ensuring timely availability of results according to many national recommendations. They must also work in close partnership with multiple disease control programs. New technologies create both an opportunity and a challenge to upgrading the capabilities of PHLs to provide new testing services. Some of the new technologies, such as next-generation sequencing (NGS) and proteomics (e.g., Maldi-ToF), will transform local capabilities for detection, identification, and molecular typing in the coming decade. PHL testing capabilities will not only require significant investments for instrumentation and scientific computing capacity, but also workforce development efforts to ensure a competent PHL workforce that can effectively use these new technologies.

As disease surveillance and testing workload increases, there is a continual need to improve the operational efficiency, coordination, and functional capacity of PHLs. This includes upgrades to data exchange networks, development of new diagnostic tests, implementation of new testing platforms, training of laboratory staff, evaluating new data sources, developing best practices, and maintenance of surge capacity.

Healthy People 2020

This focus area supports the following Healthy People 2020 objectives:
- Global Health
- Health Communication and Health Information Technology
- Healthcare-Associated Infections
- HIV and Viral Hepatitis
- Immunization and Infectious Diseases
- Preparedness
- Public Health Infrastructure
- Respiratory Diseases
- Sexually Transmitted Diseases

Other National Public Health Priorities and Strategies
- The National Health Security Strategy: https://www.phe.gov/Preparedness/planning/authority/nhss/Pages/default.aspx
- National Action Plan for Combatting Antibiotic-Resistant Bacteria (CARB): https://www.cdc.gov/drugresistance/us-activities/national-action-plan.html
- National Action Plan for Combating Multidrug-resistant Tuberculosis: https://obamawhitehouse.archives.gov/sites/default/files/microsites/ostp/national_action_plan_for_tuberculosis_20151204_final.pdf
- HHS Action Plan to Prevent Healthcare-Associated Infections (HAIs): https://health.gov/hcq/prevent-hai-action-plan.asp
- CDC Winnable Battles (HIV in the U.S., hepatitis C virus infections (HCV) and Healthcare-associated Infections): https://www.cdc.gov/winnablebattles/report/index.html

- CDC Surveillance Strategy: https://www.cdc.gov/surveillance/improving-surveillance/index.html
- Ending the HIV Epidemic: A Plan for America: https://www.cdc.gov/endhiv/index.html
- Public Health Emergency Preparedness and Response Capabilities: National Standards for State Local, Tribal, and Territorial Public Health https://www.cdc.gov/cpr/readiness/capabilities.htm
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2. CDC Project Description
  a. Approach
    I. Purpose

Public health laboratories (PHLs) work closely with their program and epidemiology counterparts using systems-based strategies for disease detection, control and prevention in the U.S. and globally, including sustaining and improving specialized testing capabilities. CDC is committed to helping improve local and state laboratory capacity in areas such as upgrades to data exchange networks, development of new diagnostic tests, implementation of new testing platforms, training of laboratory staff, evaluating new data sources, developing best practices, and maintenance of surge capacity.

    II. Outcomes

Activities in this focus area should achieve or contribute to the following proximal outcomes (refer to section ii, "Outcomes" under Part II, A-2-a or the overall logic model in this NOFO for a full list of outcomes of this cooperative agreement):

PO-1. Improved collaboration and communication across public health laboratories and other stakeholders

PO-8. Improved understanding of data-related challenges and data-informatics solutions among laboratory professionals and other stakeholders

PO-11. Improved awareness and understanding among laboratory professionals of emerging methods and processes in public health laboratories

Activities in this focus area should achieve or contribute to the following intermediate outcomes (refer to section ii, "Outcomes" under Part II, A-2-a or the overall logic model in this NOFO for a full list of outcomes of this cooperative agreement):

IO-1. Established communities of practice and other collaborative relationships among and between laboratories and other stakeholders

IO-2. Established information sharing systems across public health laboratories and with other key stakeholders

IO-3. Improved competence and engagement of public health laboratory workforce

IO-4. Enhanced practices, methods, and technical capabilities within the public health laboratory system

IO-5. Improved data exchange and interoperability among public health laboratories and their partners

IO-6. Improved public health laboratory detection, surveillance and response

III. Funding Strategy

CDC funding strategy for this focus area is described in section iv, "Funding Strategy," under Part II, A-2 (CDC Project Description; a. Approach) in this NOFO.

Funds should be used for program activities which could include: personnel, travel, supplies, equipment, contractual, and consultant support for proposed activities.

Funded recipient is expected to adhere to the requirements of the cooperative agreement. This may include:
- Identifying a designated person with overall responsibility for all activities as well as personnel responsible for each activity;
- Participating in implementation, support, and monitoring efforts at least quarterly.

Budgets should be submitted with sufficient level of detail so that the technical monitor, project officer, or the grants management officer can determine the necessity, reasonableness, and allocability of costs relative to the proposed grant activities, and their allowability pursuant to the applicable federal cost principles and requirements.

IV. Strategies and Activities

Activities under this focus area should be guided by strategies in the following categories: Science, Management and Operations (S1), Policy, Partnership, and Communication (S2), Training and Capacity Building (S3), and Laboratory Quality, Safety, Preparedness, and Informatics for Public Health Testing Services, Surveillance, and Response (S4).

S.2. Policy, Partnership, and Communication
S2.2. Collaborate and build relationships among laboratory professionals and other stakeholders in public health, healthcare, and beyond
- Convene workgroups to develop or review guidelines and recommendations on PHL infectious disease capacity and quality laboratory practice and to promote quality infectious disease testing practices and control efforts.

- Convene forums to exchange knowledge, build communities of practice and establish and promote model laboratory practices for infectious disease testing for use by public health and other laboratories.
- Convene forums to exchange knowledge, build communities of practice and establish and promote the role of PHLs in infectious disease control, especially emerging infectious diseases.
- Sustain and enhance strategic partnerships with governmental and non-governmental agencies and professional organizations in order to inform public policy development and to improve the recognition and promote the role of PHLs in infectious disease detection and control.
- Promote strategies for PHLs to communicate and collaborate with non-clinical outreach organizations in their communities on issues such as standardizing non-clinical test reporting and referral for infectious disease testing, testing quality assurance programs, and facilitating training in these sites.
- Maintain laboratory networks to complete analytical studies of new diagnostic and surveillance tests and algorithms.
- Maintain an organized group of infectious disease experts to provide routine input into activities, policies, and guidance and to prioritize infectious disease surveillance needs, goals, and activities.
  - Promote national, state, and local PHL systems that collaborate with clinical laboratories.
- Enhance communication and professional linkages regarding infectious diseases between PHLs and clinical and academic laboratories.
  - Increase PHL participation in advisory roles for CDC committees.
  - Provide information to the federal government and other stakeholders.
- Provide information regarding infectious diseases to regulatory agencies and standard setting organizations (e.g., U.S. Department of Agriculture (USDA), the Food and Drug Administration (FDA), the Centers for Medicare & Medicaid Services (CMS), and the Clinical and Laboratory Standards Institute (CLSI).
- Provide testing, outbreak response and surveillance information to national data sets.

S2.3. Facilitate information exchange and dissemination among practitioners and other stakeholders
- Develop, monitor and promote resources (both printed and electronic) to facilitate exchange of programmatic and scientific information critical to the role of PHL in infectious disease diagnostic practice; promote quality infectious disease laboratory practice; and, to address knowledge and capacity gaps in infectious disease diagnostic and drug resistance testing practice.
  - Report activities of Reference Centers (VPD-RCs) in a periodic newsletter.
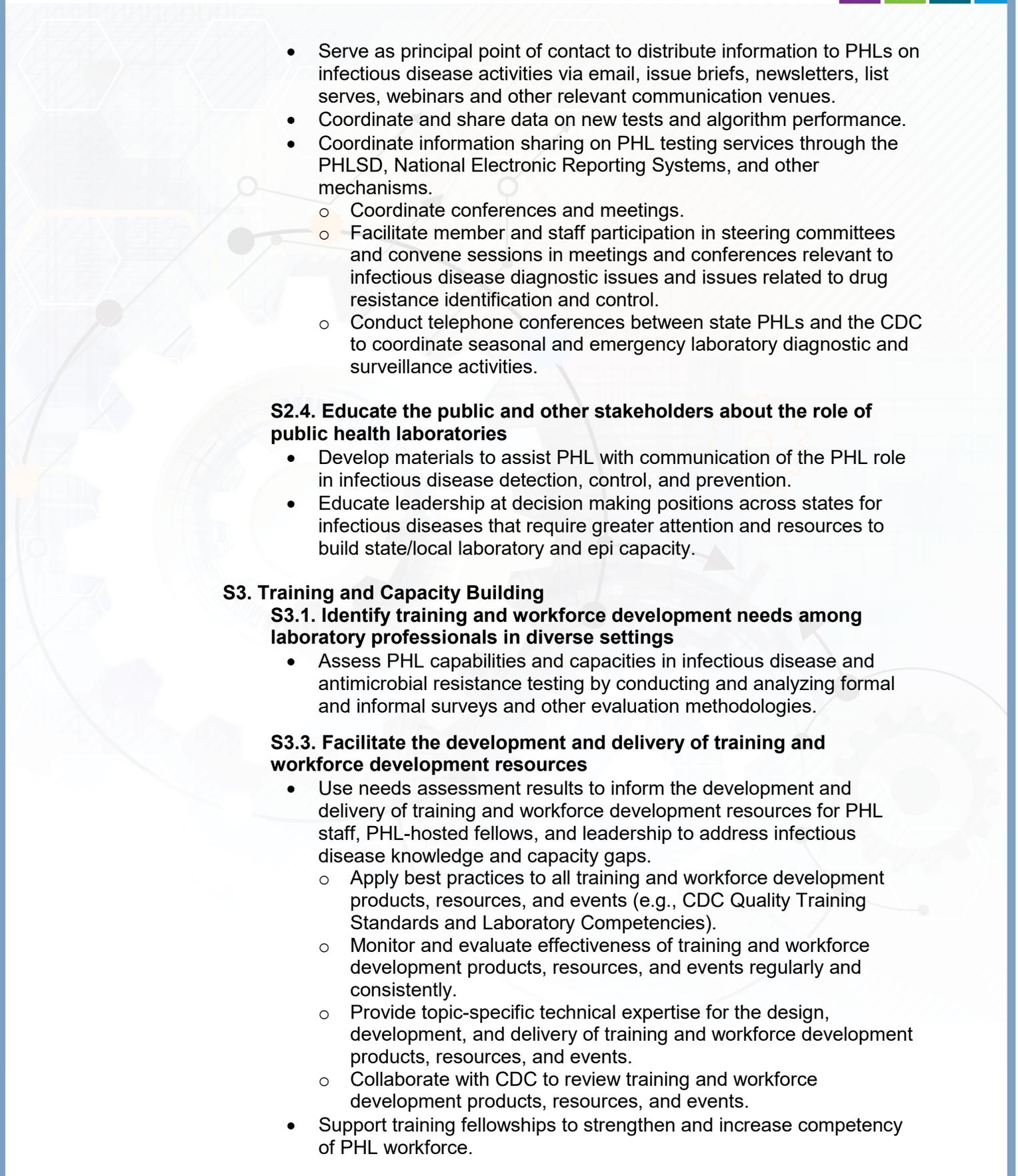
- Serve as principal point of contact to distribute information to PHLs on infectious disease activities via email, issue briefs, newsletters, list serves, webinars and other relevant communication venues.
- Coordinate and share data on new tests and algorithm performance.
- Coordinate information sharing on PHL testing services through the PHLSD, National Electronic Reporting Systems, and other mechanisms.
  - Coordinate conferences and meetings.
  - Facilitate member and staff participation in steering committees and convene sessions in meetings and conferences relevant to infectious disease diagnostic issues and issues related to drug resistance identification and control.
  - Conduct telephone conferences between state PHLs and the CDC to coordinate seasonal and emergency laboratory diagnostic and surveillance activities.

S2.4. Educate the public and other stakeholders about the role of public health laboratories
- Develop materials to assist PHL with communication of the PHL role in infectious disease detection, control, and prevention.
- Educate leadership at decision making positions across states for infectious diseases that require greater attention and resources to build state/local laboratory and epi capacity.

S3. Training and Capacity Building
S3.1. Identify training and workforce development needs among laboratory professionals in diverse settings
- Assess PHL capabilities and capacities in infectious disease and antimicrobial resistance testing by conducting and analyzing formal and informal surveys and other evaluation methodologies.

S3.3. Facilitate the development and delivery of training and workforce development resources
- Use needs assessment results to inform the development and delivery of training and workforce development resources for PHL staff, PHL-hosted fellows, and leadership to address infectious disease knowledge and capacity gaps.
  - Apply best practices to all training and workforce development products, resources, and events (e.g., CDC Quality Training Standards and Laboratory Competencies).
  - Monitor and evaluate effectiveness of training and workforce development products, resources, and events regularly and consistently.
  - Provide topic-specific technical expertise for the design, development, and delivery of training and workforce development products, resources, and events.
  - Collaborate with CDC to review training and workforce development products, resources, and events.
- Support training fellowships to strengthen and increase competency of PHL workforce.

- o Collaborate with CDC to establish fellow and host site eligibility requirements and performance expectations.
- o Provide guidance and technical assistance to fellows and host sites.
- o Manage operations and funds to support fellows.
- o Coordinate with the recipient Training and Workforce Development Program regarding cross-cutting and program-specific data generation to contribute to fellowship program monitoring and evaluation activities.
- Provide training to public health, clinical, and commercial laboratories to promote quality assurance practices, adoption of new and recommended testing technology and algorithms, and best practices in the laboratories (including waived testing sites under the Clinical Laboratory Improvement Amendments (CLIA).
  - o Improve diversity of non-traditional laboratory training (e.g., informatics, bioinformatics, safety) for laboratory professionals.

Additional training and workforce development activities are detailed in Appendix I: Workforce Development.

S4. Laboratory Quality, Safety, Preparedness, and Informatics for Public Health Testing Services, Surveillance, and Response
S4.1. Develop and implement informatics-related solutions and standards to improve data exchange and interoperability

In coordination with the CDC workgroup that provides governance for informatics projects accomplished through collaborations with CDC partners and the recipient's informatics program:

- Develop and implement integrated information systems and networks for the exchange of surveillance data between government agencies and partners
  - o Support and expand data exchange between PHLs, and CDC via HL7 messaging.
- Maintain secure communication systems with interoperability between CDC, PHLs and surveillance stakeholders.
- Promote and support health systems-oriented laboratory informatics practice, use of new technologies, and standards-based interoperability
  - o Promote the reporting and communication of laboratory results to providers and programs as soon as they become available using more efficient reporting protocols and technologies.
- Conduct activities with state PHLs to evaluate the use of alternative data sources for infectious disease surveillance.

Additional Informatics activities are detailed in Appendix E: Informatics.

S4.2. Identify and address systems to improve the practice of laboratory quality and safety in public health laboratories
- Conduct program performance evaluations of PHLs by analyzing metrics data.

- Develop and implement best practices to improve infectious disease laboratory surveillance (e.g., turn-around time for reporting, accuracy, appropriate use of resources)
  - Manage and support external quality control programs.
  - Manage and support the availability of validations panels to support assay validation at PHLs.
  - Develop analytical tools to guide infectious disease testing, outbreak response, and surveillance decision-making
  - Assess the state of PHL safety using surveys, evaluations, risk assessment or other methods.

Additional Quality and Safety systems activities are detailed in Appendix H: Quality and Safety Systems.

S4.3. Identify and address emerging methodological and process improvements in public health laboratories

- Systematic review of new commercial assays and assays and tools developed at CDC intended for deployment to PHLs to ensure efficient test implementation and maximum testing utility.
- Contribute to development, evaluation and validation of new technologies and procedures, products, and alternative testing algorithms in collaboration with CDC.
- Promote and provide support for the role of PHLs in test development, validation, and evaluation studies.
- Develop and promote technology transfer
  - Ensure and enhance technology transfer from CDC and other agencies' PHLs.
  - Ensure appropriate quality control when technology is transferred to community-based organizations involved in infectious disease testing.
- Develop strategies for the federal, state, and local level to overcome barriers to implementation of new infectious disease diagnostics and resistance testing technology and protocols.
  - Develop testing strategies for infectious diseases by working with laboratories, state and local epidemiologists and primary health care providers.
- Provide leadership and management approaches to develop timely and accessible laboratory testing for infectious diseases by PHLs
  - Provide leadership and management for designated PHLs to serve as Reference Centers based on a shared service model.
  - Support PHLs to have broad access to Legionella testing with standard procedures, and reporting, with high quality results.
  - Manage and support Reference Centers to provide broad access to infectious disease testing with high quality, uniform testing, short turnaround times and electronic reporting, and facilitate the introduction of new testing assays and algorithms.

S4.4. Provide technical assistance to state and local public health laboratories to support improvements in public health outcomes

- Provide expert consultation to CDC, PHLs, other public health partners, and regulatory and standard setting organizations on relevant infectious disease issues.
  o Conduct periodic teleconferences with Reference Centers, CDC, PHLs and state epidemiologists to maximize the public health benefits from Reference Center testing.
- Promote the implementation of the new infectious disease testing guidelines in public health and clinical laboratories in the United States.
- Assist in developing laboratory services and assist in control efforts for infectious disease diagnostics and detection of antimicrobial resistance.
- Provide leadership for framework and support of alternate service delivery models (e.g., Reference Centers and Regional Testing Centers) to ensure access to core infectious disease laboratory services (e.g., conventional drug susceptibility testing, and molecular testing).
- Provide support for PHL studies.
- Provide services that support uptake of CDC testing guidance.

S4.5. Identify and address gaps in laboratory infrastructure and capability to prepare and respond to public health threats
- Communicate to PHLs regarding pandemic preparedness and response.
- Address technical assistance requests in response to seasonal, variant and pandemic influenza outbreak responses and variant influenza outbreak responses in a timely way.

b. Evaluation and Performance Measurement
    I.   CDC Evaluation and Performance Measurement Strategy
The CDC Evaluation and Performance Measurement Strategy for this focus area uses the guidance from the overall CDC Evaluation and Performance Measurement Strategy described in this NOFO (Part II, A-2-b-i. CDC Evaluation and Performance Measurement Strategy), to address the following specific performance measures (including process measures and outcome measures) for this focus area.

Process measures for each strategy in this focus area may include:

Strategy and Activity	Process Measure
S2.2. Collaborate and build relationships among laboratory professionals and other stakeholders in public health, health care, and beyond	• Number and scope of recipient outreach efforts to engage PHLs, and other stakeholders in partnerships and collaborations. • Number of times infectious disease committees and subcommittees meet per year to collaborate and build relationships among laboratory professionals and other

	• Number of speakers recruited by the Infectious Disease Subcommittees for recipient's workshops and meetings to collaborate and build relationships among laboratory professionals and other stakeholders in public health, healthcare, and beyond. • Integration of Influenza Subcommittee's expanded charge by ID Committee and the recipient's Board of Directors to include other respiratory pathogens of public health concern to collaborate and build relationships among laboratory professionals and other stakeholders in public health, healthcare, and beyond. • Number of subcommittee engagements and products shared with stakeholders (e.g FDA, PHLs) regarding pending over-the-counter infectious disease diagnostics to collaborate and build relationships among laboratory professionals and other stakeholders in public health, healthcare, and beyond. • Number of partnerships to build regional, state, and local infrastructure to detect and report AR threats in the AR Laboratory Network. • Number of partner organizations engaged to raise awareness of and participation in the AR Lab Network and other Reference Centers. • Educational material developed and disseminated, number of webinars or other discussions focused on improving turn-around time and accuracy of testing.
S2.3. Facilitate information exchange and dissemination among practitioners and other stakeholders	• Number, frequency, and timeliness of recipient's efforts to support information exchange and dissemination within and between laboratory and other stakeholder communities. • Number of times recipient provided technical assistance and connected states with appropriate CDC staff in response to Right Size questions.

	• Number of national calls facilitated to provide information exchange and dissemination of testing and surveillance guidance among practitioners and other stakeholders. • Number of resources and types of resources to foster a coordinated approach to detection of and response to AR threats. • Number of education sessions and mix of attendees at stakeholder sessions to increase awareness of and participation in AR Lab Network. • webpage developed to provide real-time data around testing volumes and results • Number, timeliness and accuracy of products developed and disseminated to promote testing guidance.
S2.4. Educate the public and other stakeholders about the role of public health laboratories	• Number and type of target audience-appropriate educational materials developed. • Number, frequency and type of target audience-appropriate informational materials developed and disseminated, such as VPD-RC's newsletter. • Frequency and timeliness of the educational efforts. • Number of education sessions and mix of attendees at stakeholder sessions to increase awareness of the role of PHLs in the detection and response to AR threats and the activities included in the AR Lab Network.
S3.1. Identify training and workforce development needs among laboratory professionals in diverse settings	• Number of surveys conducted to identify training and workforce development needs among laboratory professionals in diverse settings. • Response rate for needs assessments (Percent of invitees who responded) – which is an indicator of a well-defined target audience and quality of survey design. • Number of prioritized needs based on results from needs assessments • Number of recommendations to address identified needs. • Number of education sessions to address training and workforce development needs.

S3.3. Facilitate the development and delivery of training and workforce development resources	• Number of infectious diseases training and workforce development resources facilitated and/or delivered. • Number of national technical and informational webinars hosted. • Number and type of resources and delivery methods used to facilitate workforce development.
S4.1. Develop and implement informatics-related solutions and standards to improve data exchange and interoperability	• Number of public health labs using new data solutions (e.g., HL7 messaging; ETOR) to enhance timely data reporting.
S4.2. Identify and address systems to improve the practice of laboratory quality and safety in public health laboratories	• Describe types of systems and services implemented to improve lab quality among PHLs. • Number of performance evaluations of PHLs performed to assess capacity to detect and report on infectious disease threats. • Number of PT panels provided for testing and number of laboratories successfully completing PT. • Number and type of validation panels requested by PHLs.
S4.3. Identify and address emerging methodological and process improvements in public health laboratories	• Number of specimens tested per infectious disease Reference Center supported by the recipient. • Number of pilot and reproducibility studies conducted leading to increased surveillance efficiency and/or FDA clearance submissions. • Number of contracts awarded for pilot and reproducibility studies • Increase usage of WGS methods on Legionella testing. • Number and type of process improvements identified and implemented in PHLs. • Number of routine tests performed, turnaround time, and quality indicators at supported Reference Centers. • Number of laboratories designated as Reference Centers to maximize coverage, and catchment. • Number of PHLs submitting samples to established Reference Centers.

S4.4. Provide technical assistance to state and local public health laboratories to support improvements in public health outcomes	- Number and type of technical assistance provided to PHLs for AR related activities. - Number of teleconferences and webinars that engage key partners. - Number of contracts awarded. - Number of contracts maintained. - Number of monthly calls facilitated between recipient and CDC SMEs. - Number of technical assistance requests addressed. - Number of states tracked for meeting influenza surveillance goals established by right sizing. - Describe leadership and management approaches provided to support PHLs and ensure access to AR lab services for detection of AR.
S4.5. Identify and address gaps in laboratory infrastructure and capability to prepare and respond to public health threats	- Number of communications provided to PHLs regarding pandemic preparedness and response. - Number of technical assistance requests addressed in response to seasonal influenza outbreak responses. - Number of technical assistance requests addressed in response to variant outbreak responses. - Number of technical assistance requests addressed in infectious disease outbreak responses.

Outcome measures for this focus area may include:

Outcome	Outcome Measure
PO-1. Improved collaboration and communication across public health laboratories and other stakeholders	- Number of PHLs who are enrolled to the supported Reference Centers. - Percent of resource materials/ reference documents on partner website that are up to date. - Number of webinars, calls, and other outreach activities conducted.

PO-8. Improved understanding of data-related challenges and data-informatics solutions among laboratory professionals and other stakeholders	• Number of surveys assessing laboratory informatics and data transfer capacities and needs. • Number of informatics-related trainings offered annually for PHL partners.
PO-11. Improved awareness and understanding among laboratory professionals of emerging methods and processes in public health laboratories	• Number of surveys assessing laboratory testing capacity. • Number of trainings in emerging methods and processes.
IO-1. Established communities of practice and other collaborative relationships among and between laboratories and other stakeholders	• Number of annual or bi-annual assessments of targeted infectious diseases prevalence in the United States.
IO-2. Established information sharing systems across public health laboratories and with other key stakeholders	• Increased number of sequences that resulted from confirmed outbreaks and isolates not associated with the respective outbreaks. • Percent of complete, accurate and relevant meta data submitted (e.g., state, year, outbreak facility, source, species).
IO-3. Improved competence and engagement of public health laboratory workforce	• Improved identified training and workforce development gaps in PHL practice and established competencies in the PHL workforce. • Workforce capable of transitioning to, and implementing, new molecular technologies. • Enhanced infectious disease capacity among laboratorians and other public health officials. • Convened subcommittee calls with at least 90% member attendance for 10 of 12 months per year. • Percent responsiveness to all ID committee and sub-committee and CDC Division requests. • Increased capabilities of laboratory workforce as a result of workshop attendance, trainings, and webinars.

	- Number/percent of fellows that successfully complete the fellowship program. - Number of testing personnel who are CLIA competent for diagnostic tests reported. - Improve PHL usage and knowledge base of CDC's bioinformatics toolset.
IO-4. Enhanced practices, methods, and technical capabilities within the public health laboratory system	- PHLs have improved interoperable electronic data reporting systems that facilitate data exchange and rapid dissemination of diagnostic results. - PHLs are proficient in testing and have knowledge of laboratory practices of infectious diseases. - Introduced new assays and improved PHL capacity for pathogen genetic characterization. - Improved efficiency of laboratory capabilities supporting surveillance. - Number of PHLs capable of providing testing for both environmental and clinical specimens. - Number of PHLs reporting genetic data to CDC and public databases. - Number of PHLs submitting either isolates or positive specimens for genetic characterization.
IO-5. Improved data exchange and interoperability among public health laboratories and their partners	- Number/percent of PHLs that implement standardized electronic messaging of data to and from CDC. - States meeting or exceeding CDC-defined surveillance goals.
IO-6. Improved public health laboratory detection, surveillance and response	- Number of documented improvements in infectious disease testing and prevention programs. - Number of implemented and improved methods to respond to, and detect, disease outbreaks and emerging infectious diseases. - Improved influenza surveillance, detection, diagnostics, antiviral assessment, vaccine strain selection, pandemic preparedness and response capabilities as a result of information

	exchange and dissemination as result of national calls. • Number/percent of PHLs that implement and are proficient in CDC-supported testing.

II. **Applicant Evaluation and Performance Measurement Plan**

The recipient will be required to submit a detailed Evaluation and Performance Measurement plan within the first 6 months of award and work with CDC staff to ensure that the evaluation plan is feasible and consistent with proposed focus area activities, the intent of this NOFO, and CDC's evaluation approach.

c. **Collaborations**

With CDC funded programs

General guidance for collaborations with CDC funded programs is described in section a, "With other CDC programs and CDC-funded organizations," under Part II, A-2-iii-1 (Collaborations) in this NOFO. The recipient is expected to collaborate with other CDC-funded programs to maximize the use of resources and improve the sustainability of the listed activities.

With organizations external to CDC

General guidance for collaborations with organizations external to CDC is described in section b, "With organizations not funded by CDC" under Part II, A-2-iii-1 (Collaborations) in this NOFO. Recipient is encouraged to explore opportunities for new collaborations with additional partners to advance public health priorities, for example:
- State and local PHLs and public health departments
- Federal agencies and programs:
  o CMS (including the CLIA implementation program)
  o FDA (including the Bloodborne Pathogens Advisory Committee)
  o Indian Health Service (IHS)
  o National Institutes of Health (NIH)
  o Office of the National Coordinator for Health Information Technology (ONC)
  o The Substance Abuse and Mental Health Services Administration (SAMHSA)
  o U.S. Department of Defense
- Accreditation and standards-setting organizations, for example:
  o College of American Pathologists (CAP)
  o The Joint Commission
- Professional organizations/Public health partners, for example:
  o American Association for the Study of Liver Diseases (AASLD)
  o American Association for Clinical Chemistry (AACC)
  o American Society for Clinical Pathology (ASCP)
  o American Society for Microbiology (ASM)
  o Association of State and Territorial Health Officials (ASTHO)
  o Clinical Laboratory Management Association (CLMA)

- o Council of State and Territorial Epidemiologists (CSTE)
- o Infectious Disease Society of America (IDSA)
- o Joint Public Health Informatics Taskforce (JPHIT)
- o National Alliance of State and Territorial AIDS Directors (NASTAD)
- o National Association of County & City Health Officials (NACCHO)
- o National Coalition of STD Directors (NCSD)
- o National Tuberculosis Controllers Association (NTCA)
- Advisory Council for the Elimination of Tuberculosis (ACET)
- Health Information Technology Policy Committee (HITPC)
- Pan American Health Organization (PAHO)
- Public Health Data Standards Consortium (PHDSC)
- World Health Organization (WHO)
- National Influenza Centers funded by CDC's Influenza Division Cooperative Agreements with Ministries of Health
- Other organizations and agencies that could assist in improving public health infrastructure through the development of programs to promote PHL leadership.

d. Target populations

In addition to PHLs and PHL professionals supporting state, local, tribal, and territorial public health programs, the specific target population of this focus area also includes stakeholders of the PHL system, such as policy makers, clinical laboratories, healthcare organizations, professional organizations, as well as the general public.

e. Organizational Capacity

Refer to section c, "Organizational Capacity of Recipients to Implement the Approach" under Part II, A-2 (CDC Project Description) in this NOFO.

f. Work Plan

The recipient is required to provide a work plan for this focus area that provides both a high-level overview of the entire five-year period of performance and a detailed description of the first year of the award. The work plan should follow the general guidance provided in section d, "Work Plan" under Part II, A-2 (CDC Project Description) in this NOFO, and address the specific strategies, activities, outcomes, and performance measures of this focus area. After the award is made, the proposed work plan (including the evaluation and performance measurement plan) may be adjusted in collaboration with the CDC Technical Monitor(s) to ensure integration of the strategies and activities and achievement of the period of performance outcomes.

g. CDC Program Support to Recipient

CDC's National Center for Immunization and Respiratory Diseases (NCIRD), National Center for Emerging and Zoonotic Infectious Diseases (NCEZID), National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention (NCHHSTP), and the Deputy Director for Infectious Diseases (DDID) will provide technical monitoring and program support for this focus area as described in section f, "CDC Program Support to Recipients," under Part II, A-2 (CDC Project Description) in this NOFO. In addition, CDC may participate in all relevant stakeholder and other meetings, either in-person or by teleconference.