



CTE Capability

Stopping outbreaks at the source. Protecting America's future.

CTE provides 24/7 support to the CDC to protect America's health security by fighting dangerous disease threats around the world. Together, we are the frontline responders, containing outbreaks overseas so they do not reach our shores.

How Does CTE Do It?

CTE works bilaterally or directly with national governments, non-governmental organizations, academia, multilateral organizations, the private sector, and other stakeholders to build core public health infrastructure that may be used to effectively identify and combat infectious disease outbreaks and respond to epidemics.

Why CTE?

CTE efforts play a critical role in the identification and containment of the world's most dangerous emerging global health threats—including deadly diseases like **HIV/AIDS, SARS, MERS, Ebola, Zika** and **COVID-19**. CTE's scientists protect America by actively tracking and monitoring potential threats around the world, developing new technologies to detect dangerous diseases, and remaining ever ready to respond when disaster strikes.

Our Approach

 Detect	 Prevent	 Respond
Prevent avoidable outbreaks	Detect threats early	Respond rapidly and effectively
<ul style="list-style-type: none"> ✓ Antimicrobial Resistance ✓ Zoonotic Disease ✓ Biosafety & Biosecurity ✓ Immunization 	<ul style="list-style-type: none"> ✓ National Laboratory System ✓ Real-Time Surveillance ✓ Reporting ✓ Workforce Development 	<ul style="list-style-type: none"> ✓ Emergency Operations Centers ✓ Linking Public Health with Law Enforcement & Multisectoral Rapid Response ✓ Medical Countermeasures and Personnel Deployment

CERTIFIED TECHNICAL EXPERTS

Public Health Emergency Preparedness and Response Capabilities



CTE Public Health Laboratory Testing Capability

- Conduct laboratory testing and report results
- Enhance laboratory communications and coordination
- Support training and outreach

CTE Public Health Surveillance & Epidemiological Investigation Capability

- Conduct or support public health surveillance
- Conduct public health and epidemiological investigations
- Recommend, monitor, and analyze mitigation actions
- Improve public health surveillance and epidemiological investigation systems

Prevention avoidable epidemics, including naturally occurring, accidental, or intentional outbreaks

- Reduce factors that contribute to antimicrobial resistance
- Reduce factors that contribute to the spread of zoonotic diseases in humans
- Promote safe and secure ways to manage biological materials to keep laboratory workers safe and reduce the risk of theft, loss, or mishandling of dangerous pathogens that could harm the public
- Strengthen the prevention, detection, and response to zoonotic diseases through One Health Zoonotic Disease Prioritization workshops and the development of national action plans to combat the exchange of disease between animals and humans
- Establish and strengthen vaccination programs to protect people from highly contagious yet preventable diseases and conduct vaccination outbreak response measures



Past Performance

DSR Technical and Scientific Support DSR/NCEZID/OD (Contract #200-2020-07317) - PRIME

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Microbiological, Technical, and Laboratory Services to support the Division of Scientific Resources [DSR] Laboratories of the National Center for Emerging and Zoonotic Infectious Diseases [NCEZID].

The placement will provide biological and microbiological services [BSL 1, 2 and 3 labs] in support of the research and diagnostic work within the division.

- ✓ Perform centralized specimen and package receiving, accessioning, laboratory processing including performance and documentation of quality control procedures specific to assigned tasks.
- ✓ Process biological specimens in support of CDC testing efforts in a BSL-2 and BSL 3 environment.
- ✓ Provide support to outbreaks, epidemics and pandemics, such as the Zika and COVID-19 viruses.
- ✓ Daily accurately enter specimen data submitted either from hardcopy laboratory request forms or via electronic file downloads into StarLims version 9 enterprise network application within 24 hours following specimen receipt.
- ✓ Retrieval and distribution of specimens for testing.
- ✓ Record and update the laboratory inventory manually and/or in computer databases.
- ✓ Prepare for long-term storage of biologic materials collected in support of CDC surveillance, and outbreak investigations.
- ✓ File specimen accession sheets in suspense file as directed within 24 hours following specimen receipt.
- ✓ Provide reports to lab/activity team leaders and branch chief on progress and any potential obstacles or delays that might impact progress.
- ✓ Provide branch chief with unresolved logistical concerns.
- ✓ Provide branch chief with all laboratory records documenting in detail results and findings; Schedule the workflow of specimens through the Genomics Sequencing Laboratory (GSL).
- ✓ Serve as a scientist responsible for production of branches reagents.
- ✓ Produce Biological reagents according to specifications.
- ✓ Develop polyclonal and monoclonal antibodies using established procedures.
- ✓ Process purified antigens.
- ✓ Prepare custom microbiological media and buffers.
- ✓ Perform ELISA tests.
- ✓ Perform Western blot assays.
- ✓ Perform Coomassie Stains of protein preparations. Prepare and maintain documentation describing all procedures performed.
- ✓ Prepare agent microbiological control strains and reagents in a BSL-2 and BSL 3 environment.
- ✓ Servicing and maintaining the CDC inventory of biological reference reagents, agents, in vitro diagnostics and test kits.
- ✓ Responsible for ensuring all confirmed CDC water sites are collected and tested according to their testing schedule.
- ✓ Collect and Test laboratory grade water and animal drinking water.



Past Performance

Monitoring and Evaluating Vaccination Coverage and Exemptions among School Children (Contract #200-2016-90111) - PRIME

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The purpose of this contract is to obtain technical and analytical assistance for the Assessment Branch in CDC's Immunization Services Division (ISD), for conducting evaluations, surveys, research, and analytical studies evaluating vaccination coverage and exemptions to state requirements for immunization in children enrolled in school or day care settings. The primary focus is on children in kindergarten, but may include some work related to children in middle school, high school and college, or in day care settings.

- ✓ Assist CDC staff with monitoring and evaluating the implementation of vaccination assessment activities by state and local area awardees.
- ✓ Evaluate the effectiveness of how awardees are conducting school assessment surveys.
- ✓ Evaluate the use the data to monitor coverage and exemption rates; and Evaluate and document statistical limitations of sampling methods (i.e. sampling tool) and advise awardee use of sampling tool prior to distribution.
- ✓ Evaluating and assessing the overall quality of the vaccination and exemption data reported by awardees and submitted to CDC for cleaning and analysis for prior, current and future school years.
- ✓ Assist with and/or designing the survey materials for awardees to utilize.
- ✓ Assist CDC with preparing to obtain human subjects approval (if needed), developing any technical assistance materials for the awardees; Participate under the direction of CDC staff in continuing to collect both process and outcome data from awardees.
- ✓ Perform data editing and analysis under the direction of the CDC staff.
- ✓ Prepare reports and articles for publication under the direction of CDC staff. Provide staff experienced in conducting surveys and collecting data.
- ✓ Provide staff experienced in developing and preparing sampling plans and processes for sampling specific populations. Provide staff experienced in supporting epidemiologic research, health surveys, evaluation, and/or surveillance studies.
- ✓ Assist CDC staff by conducting statistical analysis of data from state and local area awardees.
- ✓ Statistical analysis of data, evaluating how awardees conduct school assessment surveys.
- ✓ Statistical analysis of data to monitor coverage and exemption rates, and; Use and evaluate the sampling tool used to select samples for state and local area school assessment surveys.
- ✓ Statistical analysis (after the overall quality check, editing, and cleaning) of the vaccination and exemption data reported by awardees and submitted to CDC for cleaning and analysis for prior, current and future school years.
- ✓ Perform data management and editing/cleaning, under the direction of the CDC staff; Perform statistical analysis and programming, under the direction of the CDC staff.
- ✓ Assist in the preparation of reports and articles for publication under the direction of the CDC staff.
- ✓ Provide staff with experience supporting epidemiologic research, health surveys, evaluation, and/or surveillance studies.
- ✓ Provide staff with experience using SUDAAN and knowledge of complex survey sampling methods, in biostatistics, quantitative methods and statistical programming.



Past Performance

Development of Cloud Tools and Data Improvement Services (Contract #200-2016-92391) - PRIME

Building cloud tools and services on the Amazon Web Services (AWS) platform (Injury Data Management Platform, IDMP) that has been acquired by National Center for Injury Prevention and Control (NCIPC) to manage and process various types and sizes of datasets. The tools and services will be designed, developed, tested and implemented by using the Enterprise Performance Life Cycle (EPLC) to ensure Industry IT standards and best practices must be used and documented to ensure quality. Services also will adhere to the current standards for toxicology/drug coding and listing.

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- ✓ Design and develop user-friendly graphical user interfaces (dashboards) for various types and levels of users; Determine the best technology stack (suite of technologies) that can be maintained in a cost effect way; Build a data warehouse with a variety of datasets views that allows for various data structures accompanied with administrative dashboard tools.
- ✓ Complete technical documentation (architectural, source code files and configuration) and knowledge transfer (technical training); Iterative deployments/configurations of tool, services and software to the IDMP environment at the completion of each sprint using agile methodology; Develop strategic document with recommendations for possible extensions and enhancements of the cloud tools and services; Updated drug look-up table; Develop standard operating procedures (SOP) for how best to categorize drugs, particularly opiates; Develop guidance document regarding how to categorize current drugs in dataset.
- ✓ SharePoint developer support services: develop/implement SharePoint Web parts, applications, and integrate components, third-party add-ons, and/or capabilities into robust and innovative solutions; Works in an environment with a variety of programming languages, platforms, tools and technologies such as Visual Studio .Net, C#, SharePoint 2013, Java Script, REST API, JQuery, HTMLS, XML, XSLT, LDAP, Microsoft SQL Server, Microsoft SQL Script, Flash, Axure, and Microsoft 11S. CTE Team is responsible for providing the following:
 - Support the migration of NCIPC site collection to new version releases of SharePoint Enterprise via modify existing sites & applications, code remediation, component modifications, content migration etc. Frequencies of new releases are determined by the Microsoft Corporation - historically new versions are published every 2-3 years.
 - Support approved SharePoint COTS applications, add-ons, and third-party tools as required i.e. installation, configuration, access control, administration, and on-going support; Provide comprehensive SharePoint applications development support and
 - site construction services utilizing CDC EPLC framework processes and methodologies SharePoint applications shall be in compliant with CDC IT network security regulations, policies, and standards.
 - Assist NCIPC SharePoint Site Collection Administrator and site owners with 508 usability error identification, analysis, and remediation as necessary; Develop both externally and internally facing SharePoint portals, sites, applications, and Web pages using Microsoft Visual Studio .NET, Microsoft SQL Script, Microsoft Active Directory, Microsoft SharePoint Shared Information Services, Java Script, HTML, Ajax, XML, and a variety of other technologies as required. Majority of new sites use standard templates and out-of-the-box features. Others require building-out workflows and/or added components. Rarely does the governance authorize the construction of customized sites although several do exist and must be maintained.
 - Provides expertise in Microsoft Visual Studio .NET, Microsoft SQL Script, Ajax, Java Script, HTMLS, and XML programming languages.
- ✓ Cloud Development for National Violent Death Reporting System (NVDRS) data:
 - Design and develop user-friendly graphical user interfaces (dashboards) for various types and levels of users.
 - Build a data warehouse with a variety of datasets views that allows for various data structures accompanied with administrative dashboard tools.
 - Complete technical documentation (architectural, source code files and configuration) and knowledge transfer (technical training).
 - Iterative deployments/configurations of tool, services and software to the NVDRS environment at the completion of each sprint using agile methodology.
 - Provide, final recommendations for possible extensions and enhancements of the cloud tools and services.



Past Performance

Prescription Drug Overdose (PDO) Data Management and Consultant Support (Contract #200-2016-91580) - PRIME

The primary objectives are to secure national level subject matter experts in prescription drug overdose prevention (PDO) who can provide epidemiologic, research, and programmatic support – such as academic detailing, PDO surveillance and clinical quality improvement measures - to CDC's teams working on PDO; and provide data management support for PDO projects for the NCIPC Division of Unintentional Injury Prevention (DUIP) through highly skilled data managers/computer programmers that possesses advanced technical skills, including experience in data management, SAS programming, web-based systems, and data compliance.

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- ✓ Provide guidance to DUIP in responding to questions from CDC OD, HHS, Congress, controlled correspondence; Provide supporting data, information, or resources when CDC staff respond to media requests and interviews; Provide consultation to states on their PDO-related activities through in-person consultations (up to 4 states) and telephone consultation; Provide consultation to CDC staff and grantees on PDO prevention strategies, interventions, or techniques (e.g. academic detailing, PDMPs, clinical quality improvement measures, etc.)
- ✓ Develop and conduct up to 5 on-site trainings (at CDC in Atlanta, GA and at 2-3 state health departments) and up to 5 online training of new staff and new state grantees; Provide data, information, or drafts of clearance documents, response to comments, or other feedback from any co-authored peer-reviewed publications.
- ✓ Provide advanced level SAS programming and intermediate level Microsoft SQL database programming expertise for database management, data quality checks, analysis file preparation, data transfers to other formats (e.g., Microsoft EXCEL/WORD/Access), for data analysis of large injury-related data systems and surveys; experience with advance SAS programming using SAS macros and other advanced programming methods/techniques is need to perform these duties.
- ✓ Develop in-depth knowledge and expertise related to the data systems, web-based systems (note: expertise in JAVA is not needed), and surveys maintained in the PDO Epidemiology and Surveillance Team in order to:
 - Support various surveillance projects related to computer automated data management, quality assurance, and analyses of prescription drug overdose and opioid involved mortality and morbidity data.
 - Assist in coordinating web-based data collected nationwide and other electronically transmitted to NCIPC in various formats (e.g., Excel) for use in opioid involved mortality and morbidity surveillance studies and the provision of public use data.
 - Provide data management support in the development, implementation, and evaluation of surveillance strategies as they relate to IT and data processing objectives.
 - Document and maintain data in compliance with all Federal regulations related to information security.

Administrative Support Services to ADC& VPD (Contract #200-2016-M-90572) - PRIME

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Provide programmatic support services to the Accelerated Disease Control end VPD Surveillance Branch (ADC& VPD); Work in collaboration with ADC& VPD secretariat to ensure project deliverables are aligned with the Strategic Plan.

- ✓ Maintain the M&RI databases and SharePoint file structure for management teams. Information maintained by the databases and SharePoint include management groups formal correspondences, meeting minutes, reports and actions followed ups.
- ✓ Develop short summaries of topics pertinent to various webinars and meeting activities, and compile documents necessary for webinar and meeting background; Coordinate and support the secretariat's weekly calls and meetings by maintaining Board actions and follow ups and any tasks identified by the POB Chair and the GPEI management teams.
- ✓ Compile reports, prepare agendas, outlines and background materials for presentation papers and reports as required; Track the production of Administrative reports and outgoing correspondence related to the Measles & Rubella Initiative (M&RI), to ensure suspense dates/times are met, which may require coordinating the efforts of various staff members.
- ✓ Maintain suspense system to include but not limited to Task Tracker; Concur (government travel system and Outlook to track incoming and outgoing correspondence, coordinates details of a highly confidential and critical nature, monitors external/internal communications, addresses communications in expeditious manner and brings critical issues to immediate attention of M&RI secretarial.



Past Performance

CDC Mozambique Informatics Services (Contract #200-2015-63320) - PRIME

Division of Global HIV/AIDS (DGHA) has been the cornerstone of CDC’s response to the HIV/AIDS epidemic. CDC-Mozambique office was first created in 2000 and focused on hospital infection control. With the start of President’s Emergency Plan for AIDS Relief (PEPFAR) in 2004, CDC-Mozambique expanded its HIV/AIDS activities to include adult and pediatric treatment & care, prevention targeting vulnerable and key populations, laboratory strengthen, strategic information, blood safety, and health system strengthening.

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- ✓ CTE’s overall purpose is to provide ongoing services to further CDC’s global health goals by helping CDC-Mozambique update, optimize the functionality, and maintain key software and data management tools for planning and monitoring activities within CDC Mozambique.
- ✓ Seeks to acquire health information system development services to support the CDC team in updating, optimizing the functionality, and implementing tools for collecting, managing, and analyzing key data for program planning and monitoring.
- ✓ CTE is responsible for defining and updating detailed information systems requirements, in line with guidance and input from the CDC SI Team and other key CDC staff.
- ✓ CTE is responsible for:
 - Providing technical support to the design, development, and building on the programming of agreed upon existing tools.
 - Providing technical support for modifications or improvements to the tools throughout the project implementation.
- ✓ Developing, updating, and maintaining technical documentation for use of the system in accordance with EPLC (Enterprise Performance Life Cycle).

Violence Against Children Surveys (VACS) (Contract #200-2015-88146) - PRIME

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Provided technical assistance in all phases of VACS planning, implementation, and country report writing. Primary customers are CDC team members, in-country stakeholders, and other partners. CTE Team will be responsible to work independently on projects requiring research and preparation of written materials, briefing charts, and presentation materials.

- ✓ Assist in analytical projects to document the complex problems of violence against children and inform strategies for prevention to a global audience. Provide data analysis and data management support for tile Violence Against Children Surveys (VACS).
- ✓ Develop tile processes and relevant computer programs, including database design, development, documentation, and maintenance using Census and Survey Processing System (CSPRO) for tile Violence Against Children Surveys (VACS).
- ✓ Provide technical assistance in all places of survey planning, implementation, and country report writing for the Violence Against Children Surveys (VACS); Develop and implement strategic communications plan and support communications activities for the Violence Against Children Surveys (VACS).
- ✓ Provide logistical support and coordinate the transport of non-government Information Technology (IT) equipment to and from countries/or the Violence Against Children Surveys (VACS).