

Centers for Disease Control

Center for Global Health

Cooperative Agreement with The Pan American Health Organization (PAHO): Protecting and Strengthening Immunization Programs in The Americas

CDC-RFA-GH19-1901

Application Due Date: 01/07/2019

Signature _____ Date _____

Cooperative Agreement with The Pan American Health Organization (PAHO): Protecting and Strengthening Immunization Programs in The Americas

CDC-RFA-GH19-1901

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Part I. Overview Information

Applicants must go to the synopsis page of this announcement at www.grants.gov and click on the "Send Me Change Notifications Emails" link to ensure they receive notifications of any changes to CDC-RFA-GH19-1901. Applicants also must provide an e-mail address to www.grants.gov to receive notifications of changes.

A. Federal Agency Name:

Centers for Disease Control and Prevention (CDC) / Agency for Toxic Substances and Disease Registry (ATSDR)

B. Notice of Funding Opportunity (NOFO) Title:

Cooperative Agreement with The Pan American Health Organization (PAHO): Protecting and Strengthening Immunization Programs in The Americas

C. Announcement Type: New - Type 1

This announcement is only for non-research activities supported by CDC. If research is proposed, the application will not be considered. For this purpose, research is defined at https://www.gpo.gov/fdsys/pkg/CFR-2007-title42-vol1/pdf/CFR-2007-title42-vol1-sec52-2.pdf. Guidance on how CDC interprets the definition of research in the context of public health can be found at https://www.hhs.gov/ohrp/regulations-and-policy/regulations/45-cfr-46/index.html (See section 45 CFR 46.102(d)).

D. Agency Notice of Funding Opportunity Number:

CDC-RFA-GH19-1901

E. Assistance Listings (CFDA) Number:

93.185

F. Dates:

1. Due Date for Letter of Intent (LOI): **N/A**

2. Due Date for Applications: **01/07/2019**, 11:59 p.m. U.S. Eastern Standard Time, at www.grants.gov.

01/07/2019

3. Date for Informational Conference Call:

N/A

G. Executive Summary:

1. Summary Paragraph:

The current Notice of Funding Opportunity (NOFO) represents the fifth five-year cooperative agreement between the recipient and the Centers for Disease Control and Prevention (CDC). This NOFO aims to build upon the achievements of past agreements, while forging new collaborations to strengthen the Expanded Program on Immunization in the Americas as a whole. To this end, this NOFO is aligned with CDCs Strategic Framework for Global Immunization 2016-2020 and the recipient's Regional Immunization Action Plan (RIAP) 2015-2020 while also harmonizing current pertinent global and regional immunization strategic frameworks, including: the Global Vaccine Action Plan 2011-2020; the Polio Eradication and Endgame Strategic Plan 2013-2018; and the recipient's Strategic Plan of 2014-2019. The current partnership with the recipient includes development of standards for national immunization

programs, development of national immunization program capacity to prevent, detect and respond to vaccine preventable diseases (VPDs), and maintain the status of polio eradication; rubella, measles and neonatal tetanus elimination; and support the elimination of Hepatitis B. To achieve these strategies, the recipient will provide direct technical cooperation to Member States through both its regional headquarters and country offices. The CDC looks forward to the close and active technical collaboration with the recipient.

a. Eligible Applicants: Single
b. NOFO Type: Cooperative Agreement
c. Approximate Number of Awards: 1

d. Total Period of Performance Funding: $25,000,000
There is no award or period of performance ceiling; however, the above are estimates.

e. Average One Year Award Amount: $5,000,000

f. Total Period of Performance Length: 5
g. Estimated Award Date: 05/01/2019
h. Cost Sharing and / or Matching Requirements: N
Cost sharing or matching funds are not required for this program. Although no statutory matching requirement for this NOFO exists, leveraging other resources and related ongoing efforts to promote sustainability of the activities funded under this award is encouraged

Part II. Full Text

A. Funding Opportunity Description

Part II. Full Text

1. Background

a. Overview

The recipient and CDC have a successful cooperative agreement history spanning over 25 years. The Pan American region was the first region in the world to eliminate polio in 1991, measles in 2002, rubella and congenital rubella syndrome (CRS) in 2009, and maternal and neonatal tetanus (MNT) in 2017.

The region continues to provide leadership for new vaccine introduction in low and middle income countries, and is the earliest Gavi-eligible adopter for pneumococcal conjugate, rotavirus and human papillomavirus vaccines (HPV). The recipient is working toward elimination of viral hepatitis. Over 50% of PAHO countries include a Hepatitis B birth dose in their immunization schedules. Yellow fever outbreaks and subsequent lack of surveillance raise the risk of yellow fever throughout the Americas, including the US, in spite of high vaccination coverage. Additionally, the recipient made notable progress strengthening routine immunization and surveillance systems for polio, influenza, measles and rubella; maintaining the revolving fund for the bulk purchase of vaccines for member countries; and developing a strong platform to strengthen surveillance of other VPDs.

The world is on the verge of eradication of poliovirus. The Pan American region was certified as polio free in 1996, and must maintain this status as we move toward global eradication and post eradication. Based on the achievements in the Americas following the regional polio elimination goal to be polio free by 1990, and the Global Polio Eradication Initiative (GPEI) started in 1998, the world has seen a reduction of about 99.9% of incident cases. Five of the seven WHO regions were certified as polio free. Intense, sustained, evidence-based efforts by GPEI partners and staff around the world for 30 years led to stellar results in the reduction of polio morbidity and mortality. As we approach eliminating the last 0.1% of cases globally, it is imperative that all polio-free regions maintain their status, especially given that a case of wild poliovirus anywhere in the world is a risk to all children not fully vaccinated and to global eradication. The approach ensures continued high vaccination coverage, maintaining high levels of population immunity to polio, meeting performance standards of core acute flaccid paralysis (AFP) surveillance indicators, and compliance with polio lab containment standards.

The United States eliminated measles and rubella in 2000, 2001, respectively. All PAHO member countries verified rubella/CRS and measles elimination in 2015, 2016, respectively. Although the measles and rubella viruses no longer occur naturally in the Americas, imported cases from other regions are a constant threat, with seven million people worldwide infected with measles annually. Unvaccinated people can spread this highly contagious disease from imported cases which can lead to disease outbreaks and ultimate loss of regional elimination achievements.

Polio, measles, and rubella initiatives demonstrate the impact of immunizations on averting disease, disability and death. Immunization currently averts an estimated 2 to 3 million deaths every year. While polio, measles and rubella were successfully eliminated from the Western Hemisphere, experience demonstrates that if population immunity is not maintained, regional achievements will be forfeited. American children remain at risk for these diseases due to importations from countries where these diseases are endemic. The US government is compelled to ensure that American children and children across the globe are protected from VPDs.

b. Statutory Authorities

Sections 307 and 317(k)(1) of the Public Health Service Act (42 U.S.C. 242l and 247b(k)(1))

c. Healthy People 2020

This NOFO supports multiple priorities of Healthy People 2020, including:

- Immunization and Infectious Diseases
- Global Health

d. Other National Public Health Priorities and Strategies

This NOFO will support the US Government endorsed Global Polio Eradication Initiative (GPEI) , the Global Vaccine Action Plan (GVAP), 2011-2020., and CDCs Strategic Framework for Global Immunization 2016-2020. In addition, this NOFO will support CDC's Global Health Strategy, which focuses on: 1) improving the health and well- being of people around the world;

2) improving capabilities to prepare for and respond to infectious diseases, other emerging health threats and public health emergencies; and, 3) maximizing the potential of CDC's global programs to achieve public health impact.

e. Relevant Work

Agency Funding Opportunity Number: CDC-RFA-GH14-1401, COOPERATIVE AGREEMENT WITH THE PAN AMERICAN HEALTH ORGANIZATION (PAHO): Protecting the Advances in Polio, Rubella and Measles Elimination: Strengthening Immunization Programs in the Americas; is the current NOFO between CDC and the recipient. CDC-RFA-GH19-1901 builds on the activities and goals of the current agreement by continuing and sustaining the progress in polio eradication; measles, rubella and neonatal tetanus elimination; and enhancing other life-saving VPD activities and is in alignment with CDCs Strategic Framework for Global Immunization 2016-2020.

2. CDC Project Description

a. Approach

Bold indicates period of performance outcome.

CDC-RFA-GH19-1901 Logic Model: Protecting and Strengthening Immunization Programs in the Americas

Bold indicates period of performance outcome

Strategies and Activities	Short-term Outcomes	Intermediate Outcomes	Long-Term Outcomes
Lead development of guidelines, norms and standards for national immunization programs Develop national immunization program capacity to • achieve regional polio recertification; • maintain polio free status; • sustain Global, Regional and National Goals for measles, rubella/CRS,	**Regional Certification Commission affirms polio-free status annually** **International Expert Committee/working group affirms continued measles and rubella elimination status annually** **Improved quality, real-time availability and use of immunization and VPD surveillance data** **Regional immunization**	**Demonstrated progress in reaching VPD control and elimination targets** **Increased evidence-base for national immunization program decision making** **Maintaining high levels of population immunity**	**Achieving and/or maintaining VPD control, elimination and eradication targets** **Decreased VPD morbidity and mortality**

maternal and neonatal tetanus (MNT) elimination; • achieve elimination of hepatitis B and control of other VPDs; • Improve immunization coverage and equity; • new vaccine introduction Identify and disseminate lessons learned/best practices for high quality national immunization programs to/from other regions	**program policies, guidelines, and tools reflect best evidence** **Updated regional guidelines on AEFI surveillance in PAHO region** **Improved capacity for VPD serosurveillance to detect immunity gaps** **Increased vaccination coverage** **AFP surveillance performance indicators met** **Documented transfer of lessons learned to/from other regions**	**against VPDs** **Increased equity of vaccination coverage** **Improved capacity to prevent, detect and respond to VPDs** **Increased technical collaboration among PAHO and WHO regions**	

i. Purpose

This NOFO will support efforts to sustain and strengthen global, regional, and national immunization program capacity needed to:

- Maintain regional polio-free status by ensuring: continued vaccination; meeting GPEI AFP surveillance indicators; compliance with global containment standards
- Achieve/maintain GVAP goals (elimination targets for select VPDs; polio eradication/containment; coverage and equity targets)
- Achieve 2030 Sustainable Development Goal: End VPD deaths in children under age 5;
- Reduce chronic disease and cancer deaths from VPDs

- Prevent, detect, and respond to VPD outbreaks

ii. Outcomes

Short-Term Outcomes

1. Regional Certification Commission affirms polio-free status annually at the AMR RCC, documentation to show polio-free status of PAHO Member States will be presented and Commissioners will affirm status
2. International Expert Committee/working group affirms continued measles and rubella elimination status annually
3. Improved quality, real-time availability and use of immunization and VPD surveillance data
    - Improved quality of country-collected immunization and VPD surveillance data from identified areas for review
    - Polio environmental surveillance conducted using best practices
    - Polio environmental surveillance results are used to inform polio response
4. Regional immunization program policies, guidelines, and tools reflect best evidence
5. Updated regional guidelines on AEFI surveillance in PAHO region
6. Improved capacity for VPD serosurveillance to detect immunity gaps
7. Increased vaccination coverage
    - High hepatitis B vaccination coverage including birth dose
8. AFP surveillance performance indicators met
    - Meeting performance standards on two core surveillance indicators (AFP detection rate and stool adequacy) has been demonstrated to be the hallmark of a strong polio surveillance system, and has been used for decades. It is critical to achieve and maintain high performance standards of these indicators. Integrated VPD surveillance is to be progressively strengthened
9. Documented transfer of lessons learned to/from other regions

Intermediate Outcomes

1. Demonstrated progress in reaching and maintaining VPD control and elimination targets
    - Measles and rubella elimination targets achieved and maintained
    - Neonatal tetanus elimination targets achieved and maintained
    - Member states receive guidance for assessing progress towards hepatitis B elimination should be developed and a process for verification of elimination established.
    - Region and member states have evidence from serosurveys or other appropriate methods to assess progress towards and achievement of hepatitis B elimination.
    - Elimination target achieved for hepatitis B through high levels of hepatitis B vaccination including the birth doses
2. Increased evidence-base for national immunization program decision making
    - Lessons learned disseminated to improve regional and global guidance on use of school platform for vaccination coverage screening.
3. Maintaining evidence of high levels of population immunity against VPDs

- Children protected from polio through high levels of population immunity according to regional goals
- Control of tetanus is achieved through inclusion of tetanus booster dose in national immunization programs of all member states
- Increased evidence of population immunity to VPDs

4. Increased equity of vaccination coverage
    - Progress made to achieve high vaccination coverage in all districts
    - All PAHO countries meeting regional standards for AEFI surveillance and reporting
    - Rapid response systems in place to investigate, characterize and communicate emerging vaccine safety data and to appropriately adapt vaccination policy
5. Improved capacity to prevent, detect and respond to VPDs
    - High quality country VPD surveillance data including from electronic immunization information systems
    - Improved coverage of cholera vaccination where indicated, and integration of WASH activities with cholera vaccination response
    - Successful implementation of yellow fever vaccination catch-up campaigns in high-risk countries
    - AFP surveillance performance indicators maintained
    - Successful containment of all Type 2 poliovirus
    - Successful implementation of strategies to respond to and mitigate VPD outbreaks when they occur
6. Increased technical collaboration among PAHO and WHO regions

Long-Term Outcomes

1. Achieving and/or maintaining VPD control, elimination and eradication targets
    - Regional measles and rubella/CRS elimination target maintained
    - Regional maternal and neonatal tetanus elimination target maintained
    - Demonstrated progress in reaching VPD elimination targets for hepatitis B
    - Demonstrated progress in reaching and maintaining of control of other VPDs
    - Poliovirus contained after global polio eradication is achieved
2. Decreased VPD morbidity and mortality
    - Decreased morbidity and mortality due to yellow fever
    - Decreased morbidity and mortality due to cholera

iii. Strategies and Activities

Strategies and Activities

1. Lead development of guidelines, norms and standards for national immunization programs
2. Develop national immunization program capacity to achieve regional polio recertification; maintain polio free status; achieve and sustain Global, Regional and National Goals for measles, rubella/CRS, maternal and neonatal tetanus (MNT) elimination; achieve elimination of hepatitis B and control of other VPDs; immunization

coverage and equity; and new vaccine introduction
    - Reconvene International Expert Committee/Regional Verification Committee for measles and rubella to establish ongoing process for affirming elimination status
    - optimize keep-up and catch-up vaccination for children seen in health care settings and extend vaccination through the life course
        - Characterize and strengthen school screening policies and practices, and assess impact on immunization coverage.
        - Ensure strong safety systems to rapidly detect and respond to adverse events following immunization
        - Develop and appropriately scale strategies to respond rapidly and effectively to threats to vaccine acceptance
    - reach chronically unreached children for vaccination
        - Support the development and appropriate scaling of strategies to address vaccine hesitance and bring other behavioral insights to generate self-sustaining demand for vaccines and vaccination services
    - Support member states in achieving hepatitis B elimination
        - Develop and disseminate guidance to member states for assessing progress toward hepatitis B elimination and verification
        - Collect or provide technical assistance to collect evidence from serosurveys or other appropriate methods to assess progress toward hepatitis elimination
    - expand yellow fever vaccination to endemic areas
    - develop high quality VPD surveillance and response, including laboratory networks supporting VPD testing
        - Develop and refine methodologies for conducting polio environmental surveillance within GID priority countries including comparing of genetic sequences from polioviruses isolated with environmental surveillance with those isolated from clinical cases and using results to inform response
        - conduct systematic and ad-hoc environmental surveillance for polioviruses in GID priority countries
    - provide evidence-based decision making for program management and policy development by strengthening:
        - collection and use of strategic immunization information
            1. Implementation of Immunization Information Systems Assessment (IISA) and evaluation of Immunization Registries in targeted countries as requested. Outputs include 1.) A report with data quality and data use indicators; 2.) An evaluation of the strengths and weaknesses of the electronic immunization registry system; 3.) Elaboration of a data quality improvement (DQI) plan; and 4.) Monitor implementation of DQI plan.
            2. Data quality evaluation and/or improvement in a high needs PAHO country, as requested by PAHO
            3. Collaboration on standards and guidelines for methods and systems to improve vaccination and VPD surveillance data quality in the Americas region, including electronic immunization

registries.
4. Innovative approaches to evaluate data quality in the Americas region, possibly including a refinement of the methodology to evaluate data quality in electronic immunization registries.

- immunization workforce capacity to monitor, evaluate and improve program performance
    1. Assess need for EPI workforce capacity building interventions in target countries in the region.
- development of evidence-based recommendations for improved immunization policies and practices by National Immunization Technical Advisory Groups
    1. Pilot testing of NITAG evaluation tool.
    2. Support for training of NITAGs and shared training missions within the region for NITAGs
- evidence-base for sustainable immunization financing
    1. Provide technical support on improving financial ownership of immunization programs for GID priority countries in PAHO region
    2. Provide technical guidance on improving affordability of vaccines and development of frameworks for vaccine procurement mechanisms for countries without Gavi support
- public health institution functionality for evidence-based decision making
- development and use of technically accurate materials and guidance for strategic communications

3. Identify and disseminate lessons learned/best practices for high quality national immunization programs to/from other regions
    - Identify and disseminate lessons learned and best practices for high quality immunization program financial planning and management such as (but not limited to) expenditure tracking and economic evaluations tools and guidance documents

1. Collaborations

a. With other CDC programs and CDC-funded organizations:

Recipient is expected to collaborate with the following groups and to explain how each of these collaborations might assist the recipient in achieving the NOFO outcomes:

- CDC's Global Immunization Division (GID);
- CDC’s National Center for Immunization and Respiratory Diseases
- UNICEF country teams;
- WHO regional and country teams;
- CDC subject matter experts in other Centers and Offices (required when applicable);
- CDC staff in affected countries (required when applicable);

- CDC Incident Command leadership and staff (required when applicable)

b. With organizations not funded by CDC:

Recipient may collaborate with other organizations external to CDC as deemed necessary to achieve project outcomes. The recipient should explain how each of these collaborations might assist the recipient in achieving the NOFO outcomes. Organizations include: Ministries of Health (and Finance when needed), Bill and Melinda Gates Foundation (BMGF), USAID, Gavi, Lions Clubs International, Medicines Sans Frontier (MSF), Rotary International, National Red Cross/Crescent Societies; National polio programs including Emergency Operations Centers where applicable and/or other organizations.

2. Target Populations

The target population will be children under the age of 5 years old but may include other populations that need vaccination (e.g., teenagers, women of childbearing age). Vaccinating children in hard to reach areas is also paramount. If a wild poliovirus were to be imported, older children and adults could be affected.

a. Health Disparities

Federal disability rights laws apply to foreign assistance programs. Funded programs consider including people with disabilities in all aspects of the program (e.g., advisory boards, planning committees, project staff, consultants, etc.), and ensure to best of their ability that persons with disabilities are not discriminated against in hiring processes, and that facilities and communications are accessible.

iv. Funding Strategy

N/A

b. Evaluation and Performance Measurement

i. CDC Evaluation and Performance Measurement Strategy

The purpose of evaluation and performance measurement is to help CDC recipients: (1) Monitor the extent to which activities were successfully completed; (2) Demonstrate progress toward achieving program outcomes (e.g., Were outcomes of interest achieved?); and (3) Inform decisions about future programming that drive continuous program improvement for more efficient and effective program performance (e.g.,What and how could performance be improved?).

An Evaluation and Performance Measurement Plan (EPMP) is required as part of this NOFO to measure NOFO accomplishments. The primary objective of the EPMP implementation is to determine the progress of activities under this NOFO and indicate how they relate to the desired outcomes. The results will be used for program improvement, accountability and reporting, and for sharing with partners and other stakeholders. The EPMP framework describes the desired activities, outcomes and performance measures and how CDC will work with the recipient to support achievement of these. Below are suggested measures.

Activity/Strategy	Performance measure (process)	Potential data source
Activity #2 Optimize keep-up and catch-up vaccination for children seen in health care settings and extend vaccination through the life course	Number of school screening policies and practices updated. Number of countries with surveillance systems that are able to detect AEFI increased. Number of countries that have risk communication plans in place Number of countries who have trained their communications staff in the last year	Reports from the countries
Activity #2 Reach unreached children for chronically vaccination	Number of countries that have developed strategies to address vaccine hesitance Number of countries that have a demand module included in the most recent national EPI review Number of countries that have community engagement activities incorporated into Red/REC strategy. Number of lowest performing areas that have user-perspective data incorporated into annual planning.	Country reports
Activity #2 Expand yellow fever vaccination to endemic areas	Number of countries, with endemic yellow fever disease, that include yellow fever vaccine in their routine immunization system	Country reports
Activity #2 Collection and use of strategic immunization information	Implementation of Immunization Information Systems Assessment (IISA) and evaluation of Electronic Immunization	Concept Note/Proposal; Final Report; Data Quality Improvement Plan (Done for every IISA)

	Registry in targeted countries IISA plan and budget developed Development of indicators and analysis themes Development of Data Quality Improvement plan and implementation within timeframe	
Activity #2 Development of evidence-based recommendations for improved immunization policies and practices by National Immunization Technical Advisory Groups	Number of countries that have piloted the NITAG evaluation tool Number of trainings for NITAG implemented and NITAG missions completed	Country reports
Activity #2 Provide technical support on improving financial ownership of immunization programs for GID priority countries in PAHO region	Number of consultations with PAHO countries on financial planning and management	Reports, Meeting minutes
Activity #2 Provide technical guidance on improving affordability of vaccines and development of frameworks for vaccine procurement mechanisms for countries without Gavi support	Number of technical consultations, trainings, and workshops conducted by the recipient on vaccine affordability	Technical consultation reports, Meeting minutes
Activity #2 Identify and disseminate lessons learned and best practices for high quality immunization program financial planning and management such as (but not limited to) expenditure tracking and economic evaluations tools and guidance documents	Number of publications materials and/or peer reviewed disseminations Number of financial planning/ management tools and guidance documents made accessible in public domain	Peer reviewed literature databases, PAHO online repository

Outcomes	Performance measure (outcome)	Potential data sources
Short Term #1 Regional Certification Commission affirms polio-free status annually	Frequency and nature of engagement with Member States Clear presentation and rationale of which countries are selected to present documentation at AMR RCC. Countries required to present documentation actually present documentation at AMR RCC	PAHO RCC Reports, meeting minutes/partner communications; ad hoc and frequency TBD
Short Term #3 Improved quality, real- time availability and use of immunization and VPD surveillance data	Monitor implementation of any DQI plans developed from IISAs Development and utilization of standards, Standard Operating Procedures (SOPs), and/or guidelines for methods and approaches to implement adequate immunization service provision, EPI data management and overall improvement of VPD surveillance data quality in the Americas region, including electronic immunization registries Number of countries meeting regional standards for AEFI surveillance and reporting Correlation between % districts with DTP3 coverage ≥ 80% compared to national coverage estimate for DTP3 Describe factors affecting accuracy of numerator data globally, and any changes in these. Number/% of low- and middle income countries with	Reports, Technical Working Group meetings, Technical Assistance Reports (Done for every DQI; report on quarterly basis); JRF data

	functioning real-time data (e.g., dashboard) for a) VPD surveillance and b) immunization coverage data.	
Short Term #4 Regional immunization program policies, guidelines, and tools reflect best evidence	Regional guidelines for AEFI surveillance updated and disseminated throughout the region	Regional report
Short Term #6 Improved capacity for VPD serosurveillance to detect immunity gaps	Countries conducting serosurveillance studies Countries using Multiplex bead assays (MBA) technology Lab trainings on MBA	Serological survey data
Short Term #7 High hepatitis B vaccination coverage, including birth dose	Number/% of countries reaching national coverage targets for penta3 in reporting period Number/% of countries reaching national coverage targets for hepatitis B birth dose	WUENIC estimates
Short Term #9 Documented transfer of lessons learned to/from other regions	Improved access to tools and technical guidance on program financial budgeting/planning	cMYP, Annual Plans
Intermediate #3 Maintaining high levels of population immunity against VPDs	Increased # of countries conducting serosurveillance studies Increased # of countries using Multiplex bead assays (MBA) technology	Serological survey data RI program plans
Intermediate #5 Improved capacity to prevent, detect and respond to VPDs	Number of health workers deploying to or working in hard to reach areas Proportion of children vaccinated within a given administrative unit in hard to reach areas Demonstration of immunization coverage in hard to reach areas (using VTS, coverage surveys,	PAHO RCC Reports, meeting minutes/partner communications; interim reports including task team sitreps, etc; ad hoc and frequency TBD

	LQAS, IM, or any other methods as appropriate for region) Optional: demonstration of poliovirus immunity via serosurveys	
Intermediate #5 Achieve and maintain post-eradication poliovirus containment	Validated national surveys for all poliovirus infectious and potentially infectious materials Validated attestations of destruction, inactivation, or transfer Established National Authority for Containment in every country retaining poliovirus materials All poliovirus materials retained in a certified polio essential facility Demonstrated national compliance with all elements of GAP III and all relevant global poliovirus containment standards	PAHO RCC and GCC reports; adhoc and frequency TBD
Intermediate #5 AFP surveillance performance indicators met and maintained	Reverse cold chain assessment Demonstration of efforts made to maintain and strengthen AFP surveillance; Documentation of NPAFP rate of ≥2 cases per 100,000 children aged <15 years, and ≥80% stool specimen adequacy.	PAHO RCC Reports, partner communications; ad hoc and frequency TBD
Intermediate #5 Successful containment of Type 2 poliovirus	Validated national surveys for all Type 2 poliovirus infectious and potentially infectious materials Validated attestations of destruction, inactivation, or transfer	PAHO RCC and GCC Reports

	Established National Authority for Containment in every country retaining Poliovirus materials All Poliovirus materials retained in a certified polio essential facility Demonstrated national compliance with all elements of GAP III and all relevant global poliovirus containment standards	
Intermediate #6 Increased technical collaboration among PAHO and WHO regions	Increased adoption of evidence based program planning and management	
Long Term #1 Maintaining VPD control, elimination targets for polio, measles, rubella/CRS, and maternal and neonatal tetanus	Number/% of countries that meet DPT3/penta3 immunization targets Number/% of countries that include tetanus booster doses in national immunization program IEC/workgroup for Measles and Rubella reconvenes to establish an ongoing process for affirming (or denying) continued measles and rubella elimination	WUENIC, JRF data RVC reports
Long Term #1 Demonstrated progress in reaching VPD coverage, control and elimination targets for Hepatitis B	Regional guidance/guidelines for monitoring progress towards and verification of hepatitis B control and elimination goal are developed Process for reviewing & verifying achievement of	Guidelines/guidance JRF data Serological survey data Coverage surveys

	hepatitis B control and elimination is established Number of countries that have evidence from serologic surveys or other appropriate methods to verify progress towards/achievement of hepatitis B elimination goal.	

*Sources of data for performance measures may include existing data sources, such as administrative immunization coverage data provided through existing channels like the WHO/UNICEF Joint Reporting Form, or may include new data sources, such as quarterly update reports to CDC. Relevant data sources from the sub-national, national, regional or global level should be specified, as appropriate, in the Evaluation and Performance Measurement Plan (EPMP). As such, reporting frequency of measures will vary. Recipients should specify reporting frequency as quarterly or annually in the EPMP.

ii. Applicant Evaluation and Performance Measurement Plan
Applicants must provide an evaluation and performance measurement plan that demonstrates how the recipient will fulfill the requirements described in the CDC Evaluation and Performance Measurement and Project Description sections of this NOFO. At a minimum, the plan must describe:

- How applicant will collect the performance measures, respond to the evaluation questions, and use evaluation findings for continuous program quality improvement.
- How key program partners will participate in the evaluation and performance measurement planning processes.
- Available data sources, feasibility of collecting appropriate evaluation and performance data, and other relevant data information (e.g., performance measures proposed by the applicant)
- Plans for updating the Data Management Plan (DMP), if applicable, for accuracy throughout the lifecycle of the project. The DMP should provide a description of the data that will be produced using these NOFO funds; access to data; data standards ensuring released data have documentation describing methods of collection, what the data represent, and data limitations; and archival and long-term data preservation plans. For more information about CDC's policy on the DMP, see https://www.cdc.gov/grants/additionalrequirements/ar-25.html.

Where the applicant chooses to, or is expected to, take on specific evaluation studies, they should be directed to:

- Describe the type of evaluations (i.e., process, outcome, or both).
- Describe key evaluation questions to be addressed by these evaluations.
- Describe other information (e.g., measures, data sources).

Recipients will be required to submit a more detailed Evaluation and Performance Measurement plan, including a DMP, if applicable, within the first 6 months of award, as described in the Reporting Section of this NOFO.

Throughout the five-year NOFO period, CDC will work with the recipient to measure performance.

CDC will use results of performance measures to continuously determine whether NOFO activities and outcomes were achieved as planned.

CDC will review the reported results and provide feedback, noting any necessary corrective and/or improvement actions and discuss these with the recipient.

Annually, CDC, in partnership with the recipient, will hold Implementation Reviews in order to review financial information, status of activities and key successes and challenges to achieve **outcomes.** This will include site monitoring in order to (1) demonstrate accountability of the NOFO investments, and (2) prioritize actions needed to achieve the desired outcomes as planned.

c. Organizational Capacity of Recipients to Implement the Approach

The eligible applicant must clearly describe their demonstrated experience and collaboration in the following areas:

1. Collaboration in public health programs with priority country national governments;
2. Collaboration with multiple polio eradication and measles/rubella elimination partners including BMGF, USAID, UNICEF, Rotary, Gavi and others;
3. Demonstrated accomplishments in designing and implementing public health action and programs in complex settings;
4. Demonstrated capacity to mobilize sufficient culturally competent personnel to achieve outcomes;
5. Ability to manage financial reporting, budget management and administration, personnel, as well as management of grants and contracts.

d. Work Plan

Applicants should provide a detailed work plan for the first year of the project period and a high level work plan for subsequent years.

No specific work plan format is required, as long as it is clear how the contents in the work plan crosswalk to the strategies and activities, outcomes and evaluation and performance measures presented in the logic model and the narrative sections of the NOFO.

A sample work plan format is presented below to show how a traditional work plan aligns with the logic model and narrative.

- In this format, **the table would be completed for each period of performance outcome**. If a particular activity leads to multiple outcomes, it should be described under each outcome measure.

Period of Performance Outcome: *[from Outcomes section and/or logic model]*		**Outcome Measure:** *[from Evaluation and Performance Measurement section]*	
Strategies and Activities	**Process Measure** *[from Evaluation and Performance Measurement section]*	**Responsible Position / Party**	**Completion Date**
1.			
2.			
3.			
4.			
5.			
6.			

e. CDC Monitoring and Accountability Approach

Monitoring activities include routine and ongoing communication between CDC and recipients, site visits, and recipient reporting (including work plans, performance, and financial reporting). Consistent with applicable grants regulations and policies, CDC expects the following to be included in post-award monitoring for grants and cooperative agreements:

- Tracking recipient progress in achieving the desired outcomes.
- Ensuring the adequacy of recipient systems that underlie and generate data reports.
- Creating an environment that fosters integrity in program performance and results.

Monitoring may also include the following activities deemed necessary to monitor the award:

- Ensuring that work plans are feasible based on the budget and consistent with the intent of the award.
- Ensuring that recipients are performing at a sufficient level to achieve outcomes within stated timeframes.
- Working with recipients on adjusting the work plan based on achievement of outcomes, evaluation results and changing budgets.
- Monitoring performance measures (both programmatic and financial) to assure satisfactory performance levels.

Monitoring and reporting activities that assist grants management staff (e.g., grants management officers and specialists, and project officers) in the identification, notification, and management of high-risk recipients.

CDC Grant Monitoring Activities

Throughout the five-year NOFO period, CDC will engage in the following monitoring activities:

Monthly calls to review program progress, determine needs for technical assistance, and review administrative actions

Annual site visits to review programmatic progress and to plan for the following budget period; site visits will include a review of recipient program and financial reporting systems

Technical review of annual workplans and budgets, with written feedback provided to the recipient

Review of financial and programmatic reports submitted by the recipient

CDC Approaches for NOFO Evaluations:

Throughout the five-year NOFO period, CDC will partner with the recipient to conduct program monitoring and evaluation of activities as needed. This includes:

- Conducting process and outcome evaluations of the funded activities.
- Process Evaluation: Process evaluation will assess the extent to which the agreed NOFO activities have been implemented as planned. Limitations, barriers, and key success factors of the implementation will be explored. It is expected that this evaluation will be conducted during Years 2-3.
- Outcome Evaluation: Outcome evaluation will be conducted to determine whether the funded activities are leading to the expected outcomes. It is expected that this evaluation will be conducted during Years 3-4.

Finalizing the evaluation protocols and plan for implementation at the designated timeframe, a system for collecting data over time to answer evaluation questions should be established during program implementation.

Ensuring that all evaluations are consistent with established frameworks and program specific requirements. Submission of Non-research Determination (NRD) CDC-ADS for ethical clearance is required. CDC will assist the submission process.

Reporting the evaluation findings to relevant stakeholders and will make these publically available in order to enhance the utilization of the findings to improve program effectiveness, and continued program improvement upon completion of the award.

CDC Roles & Responsibilities:

CDC will provide technical assistance to the recipients to ensure that the following practices are consistent with the established evaluation standards and are integrated with all evaluation activities:

- Engage stakeholders
- Clearly state evaluation questions, purpose, and objectives
- Use appropriate evaluation design, methods, and analytical techniques
- Address ethical considerations and assurances
- Identify resources and articulate budget
- Construct data collection and management plans

- Ensure appropriate evaluator qualifications and evaluation independence
- Monitor the planning and implementation of an evaluation
- Produce quality evaluation reports
- Disseminate results
- Use findings for program improvement and sustainability

f. CDC Program Support to Recipients (THIS SECTION APPLIES ONLY TO COOPERATIVE AGREEMENTS)

CDC Staff will be substantially involved in the program activities outlined in this NOFO to include

- Providing technical assistance to recipient in support of the activities implemented under this agreement
- Collaborating with recipient to provide programmatic support to national governments for planning, implementing, and evaluating polio eradication, measles mortality reduction, rubella control/elimination and other globally agreed VPD control activities.
- Assisting in providing technical training, support, and consultation to expert staff hired by recipient to assist in the polio eradication, measles mortality reduction, rubella control/elimination and GVAP strategies.
- Providing expertise for the maintenance and development of disease surveillance structures, including assessment, strategy design, evaluation and assistance in priority countries.
- Providing laboratory expertise to recipient for the strengthening and expansion of laboratory-based surveillance systems.
- Collaborating with and providing technical assistance to recipient to determine appropriate strategies to address other mutually agreed global health priorities that may be addressed through this agreement, if and when required.

B. Award Information

1. Funding Instrument Type:	Cooperative Agreement CDC's substantial involvement in this program appears in the CDC Program Support to Recipients Section.
2. Award Mechanism:	U66
3. Fiscal Year:	2019
4. Approximate Total Fiscal Year Funding:	$5,000,000
5. Approximate Period of Performance Funding:	$25,000,000

This amount is subject to the availability of funds.

There is no award or period of performance ceiling; however, the above are estimates.

Estimated Total Funding:	$25,000,000
6. Approximate Period of Performance Length:	5 year(s)
7. Expected Number of Awards:	1
8. Approximate Average Award:	$5,000,000 Per Budget Period
9. Award Ceiling:	$0 Per Budget Period

This amount is subject to the availability of funds.

There is no award ceiling; however, the estimated amount is $5,000,000

10. Award Floor:	$0 Per Budget Period
11. Estimated Award Date:	05/01/2019
12. Budget Period Length:	12 month(s)

Throughout the project period, CDC will continue the award based on the availability of funds, the evidence of satisfactory progress by the recipient (as documented in required reports), and the determination that continued funding is in the best interest of the federal government. The total number of years for which federal support has been approved (project period) will be shown in the "Notice of Award." This information does not constitute a commitment by the federal government to fund the entire period. The total period of performance comprises the initial competitive segment and any subsequent non-competitive continuation award(s).

13. Direct Assistance

Direct Assistance (DA) is not available through this NOFO.

C. Eligibility Information

1. Eligible Applicants

Eligibility Category:	Others (see text field entitled "Additional Information on Eligibility" for clarification)

Additional Eligibility Category:

2. Additional Information on Eligibility

Single - Pan American Health Organization (PAHO)

3. Justification for Less than Maximum Competition

PAHO is the lead public health agency with more than 100 years of experience in the countries of the Americas. PAHO wears two institutional hats: 1) it is the specialized health agency of the

Inter-American System and 2) serves as Regional Office for the Americas of the World Health Organization (WHO), the specialized health agency of the United Nations.

PAHO is the only organization with a mandate for the control and prevention of vaccine-preventable diseases (VPDs) in the region of the Americas. PAHO has the lead responsibility among the United Nations organizations for implementing activities to achieve the Pan American Sanitary Conference resolution of 1994 calling for the regional elimination of measles, and the year 2003 resolution calling for the elimination of rubella and Congenital Rubella Syndrome (CRS) by year 2010.

PAHO is the only trans-national health organization in the hemisphere with a presence in each of the member countries. Under the leadership of its 35 member countries and territories, PAHO sets the region of the Americas' health priorities and mobilizes action to address health problems that respect no borders and that, in many cases, jeopardize the sustainability of health systems. Through their presence in the member countries, PAHO promotes technical cooperation between countries and works in partnership with ministries of health and other government agencies, civil society organizations, other international agencies, universities, social security agencies, community groups, and other partners.

PAHO has demonstrated the capacity and leadership in setting the standard for public health and immunizations both regionally and globally which makes PAHO uniquely qualified to implement the regional immunization vision and strategy. The region of the Americas, with PAHO leadership and technical assistance, was the first to eliminate polio in 1991, eliminate measles in 2002 (and verified in 2016) and eliminate rubella and Congenital Rubella Syndrome (CRS) in 2009 (verified in 2015). PAHO continues to provide leadership in new vaccine introduction for low and middle-income countries, with the earliest Gavi-eligible adopters for pneumococcal conjugate, rotavirus and human papillomavirus vaccines.

PAHO has demonstrated success in its partnership with CDC through a cooperative agreement history spanning more than 25 years. During this time, PAHO has made outstanding progress towards strengthening routine immunization and surveillance systems for polio, measles and rubella; including maintaining the revolving fund for the bulk purchase of vaccines for member countries and developing a strong platform for strengthening surveillance of other VPDs. During the current cooperative agreement, CDC-RFA-GH14-1401, PAHO has continued to maintain its polio-free certification since 1994, as well as verification of regional rubella and CRS elimination since 2015 and regional measles elimination since 2016. The Americas are the first global region to achieve these milestones due to PAHO’s efforts and collaboration with CDC.

Because of the qualifications, mandates and accomplishments listed above, as well as their positioning throughout the world and their status as pioneers in eradicating polio and eliminating measles, rubella and congenital rubella syndrome, PAHO is uniquely qualified above other potential recipients to continue the momentum in VPD activities. Failure to approve the request would significantly disrupt these national VPD field activities which include surveillance, laboratory, and campaign planning and the coordinated and timely administration of vaccines for polio, measles and rubella and other vaccine-preventable diseases in the region of the Americas. These activities are currently supported under the cooperative agreement, CDC-RFA-GH14-1401 which, along with previous cooperative agreements between PAHO and CDC spanning over two decades, has developed capacities and

achieved successes as elaborated above. As the US is a member state of this region, strengthening national immunization programs and sustaining the achievements of polio, measles and rubella elimination are essential to ensure that imported cases do not threaten the regional polio eradication and regional measles and rubella elimination status. Measles importations into the U.S. from countries of Latin America and the Caribbean (LAC) continue to occur with the most recent importation from LAC to the U.S. occurring in 2014. Measles outbreaks continue to occur annually in EURO. Due to the travel between Europe and within the region of Americas, the risk of U.S. importation is high. The maintenance of polio eradication, measles and rubella elimination are clearly in the best interest of the U.S., as well as other PAHO Member Countries.

4. Cost Sharing or Matching

Cost Sharing / Matching Requirement: No

Cost sharing or matching funds are not required for this program. Although no statutory matching requirement for this NOFO exists, leveraging other resources and related ongoing efforts to promote sustainability of the activities funded under this award is encouraged

5. Maintenance of Effort

Maintenance of effort is not required for this program

D. Application and Submission Information

1. Required Registrations

An organization must be registered at the three following locations before it can submit an application for funding at www.grants.gov.

a. Data Universal Numbering System:

All applicant organizations must obtain a Data Universal Numbering System (DUNS) number. A DUNS number is a unique nine-digit identification number provided by Dun & Bradstreet (D&B). It will be used as the Universal Identifier when applying for federal awards or cooperative agreements.

The applicant organization may request a DUNS number by telephone at 1-866-705-5711 (toll free) or internet at http:// fedgov.dnb. com/ webform/ displayHomePage.do. The DUNS number will be provided at no charge.

If funds are awarded to an applicant organization that includes sub-recipients, those sub-recipients must provide their DUNS numbers before accepting any funds.

b. System for Award Management (SAM):

The SAM is the primary registrant database for the federal government and the repository into which an entity must submit information required to conduct business as a recipient. All applicant organizations must register with SAM, and will be assigned a SAM number. All information relevant to the SAM number must be current at all times during which the applicant has an application under consideration for funding by CDC. If an award is made, the SAM information must be maintained until a final financial report is submitted or the final payment is received, whichever is later. The SAM registration process can require 10 or more business days, and registration must be renewed annually. Additional information about registration

procedures may be found at ***www.SAM.gov***.

c. Grants.gov:
The first step in submitting an application online is registering your organization at www.grants.gov, the official HHS E-grant Web site. Registration information is located at the "Applicant Registration" option at www.grants.gov.
All applicant organizations must register at www.grants.gov. The one-time registration process usually takes not more than five days to complete. Applicants should start the registration process as early as possible.

Step	System	Requirements	Duration	Follow Up
1	Data Universal Number System (DUNS)	1. Click on http://fedgov.dnb.com/ webform 2. Select Begin DUNS search/request process 3. Select your country or territory and follow the instructions to obtain your DUNS 9-digit # 4. Request appropriate staff member(s) to obtain DUNS number, verify & update information under DUNS number	1-2 Business Days	To confirm that you have been issued a new DUNS number check online at (http://fedgov.dnb.com/webform) or call 1-866-705-5711
2	System for Award Management (SAM) formerly Central Contractor Registration (CCR)	1. Retrieve organizations DUNS number 2. Go to www.sam.gov and designate an E-Biz POC (note CCR username will not work in SAM and you will need to have an active SAM account before you can register on grants.gov)	3-5 Business Days but up to 2 weeks and must be renewed once a year	For SAM Customer Service Contact https://fsd.gov/fsd-gov/home.do Calls: 866-606-8220
3	Grants.gov	1. Set up an individual account in Grants.gov using organization new DUNS number to become an authorized organization representative (AOR) 2. Once the account is set up the E-BIZ POC will be notified via email 3. Log into grants.gov using the password the E-	Same day but can take 8 weeks to be fully registered and approved in the system (note, applicants MUST obtain a	Register early! Log into grants.gov and check AOR status until it shows you have been approved

		BIZ POC received and create new password 4. This authorizes the AOR to submit applications on behalf of the organization	DUNS number and SAM account before applying on grants.gov)	

2. Request Application Package

Applicants may access the application package at www.grants.gov.

3. Application Package

Applicants must download the SF-424, Application for Federal Assistance, package associated with this notice of funding opportunity at www.grants.gov. If Internet access is not available, or if the online forms cannot be accessed, applicants may call the CDC OGS staff at 770-488-2700 or e-mail OGS ogstims@cdc.gov for assistance. Persons with hearing loss may access CDC telecommunications at TTY 1-888-232-6348.

4. Submission Dates and Times

If the application is not submitted by the deadline published in the NOFO, it will not be processed. Office of Grants Services (OGS) personnel will notify the applicant that their application did not meet the deadline. The applicant must receive pre-approval to submit a paper application (see Other Submission Requirements section for additional details). If the applicant is authorized to submit a paper application, it must be received by the deadline provided by OGS.

a. Letter of Intent Deadline (must be emailed or postmarked by)

Due Date for Letter of Intent: **N/A**

b. Application Deadline

Due Date for Applications: **01/07/2019** , 11:59 p.m. U.S. Eastern Standard Time, at www.grants.gov. If Grants.gov is inoperable and cannot receive applications, and circumstances preclude advance notification of an extension, then applications must be submitted by the first business day on which grants.gov operations resume.
01/07/2019

Date for Information Conference Call

N/A

5. CDC Assurances and Certifications

All applicants are required to sign and submit “Assurances and Certifications” documents indicated at http://wwwn.cdc.gov/ grantassurances/ (S(mj444mxct51lnrv1hljjjmaa)) /Homepage.aspx.
Applicants may follow either of the following processes:

- Complete the applicable assurances and certifications with each application submission, name the file "Assurances and Certifications" and upload it as a PDF file with at www.grants.gov
- Complete the applicable assurances and certifications and submit them directly to CDC on an annual basis at http://wwwn.cdc.gov/ grantassurances/ (S(mj444mxct51lnrv1hljjjmaa))/ Homepage.aspx

Assurances and certifications submitted directly to CDC will be kept on file for one year and will apply to all applications submitted to CDC by the applicant within one year of the submission date.

Risk Assessment Questionnaire Requirement
CDC is required to conduct pre-award risk assessments to determine the risk an applicant poses to meeting federal programmatic and administrative requirements by taking into account issues such as financial instability, insufficient management systems, non-compliance with award conditions, the charging of unallowable costs, and inexperience. The risk assessment will include an evaluation of the applicant's CDC Risk Questionnaire, located at https://www.cdc.gov/grants/documents/PPMR-G-CDC-Risk-Questionnaire.pdf, as well as a review of the applicant's history in all available systems; including OMB-designated repositories of government-wide eligibility and financial integrity systems (see 45 CFR 75.205(a)), and other sources of historical information. These systems include, but are not limited to: FAPIIS (https://www.fapiis.gov/), including past performance on federal contracts as per Duncan Hunter National Defense Authorization Act of 2009; Do Not Pay list; and System for Award Management (SAM) exclusions.

CDC requires all applicants to complete the Risk Questionnaire, OMB Control Number 0920-1132 annually. This questionnaire, which is located at https://www.cdc.gov/grants/documents/PPMR-G-CDC-Risk-Questionnaire.pdf, along with supporting documentation must be submitted with your application by the closing date of the Notice of Funding Opportunity Announcement. If your organization has completed CDC's Risk Questionnaire within the past 12 months of the closing date of this NOFO, then you must submit a copy of that questionnaire, or submit a letter signed by the authorized organization representative to include the original submission date, organization's EIN and DUNS.
When uploading supporting documentation for the Risk Questionnaire into this application package, clearly label the documents for easy identification of the type of documentation. For example, a copy of Procurement policy submitted in response to the questionnaire may be labeled using the following format: Risk Questionnaire Supporting Documents _ Procurement Policy.

Duplication of Efforts
Applicants are responsible for reporting if this application will result in programmatic, budgetary, or commitment overlap with another application or award (i.e. grant, cooperative agreement, or contract) submitted to another funding source in the same fiscal year. Programmatic overlap occurs when (1) substantially the same project is proposed in more than one application or is submitted to two or more funding sources for review and funding

consideration or (2) a specific objective and the project design for accomplishing the objective are the same or closely related in two or more applications or awards, regardless of the funding source. Budgetary overlap occurs when duplicate or equivalent budgetary items (e.g., equipment, salaries) are requested in an application but already are provided by another source. Commitment overlap occurs when an individual's time commitment exceeds 100 percent, whether or not salary support is requested in the application. Overlap, whether programmatic, budgetary, or commitment of an individual's effort greater than 100 percent, is not permitted. Any overlap will be resolved by the CDC with the applicant and the PD/PI prior to award.
Report Submission: The applicant must upload the report in Grants.gov under "Other Attachment Forms." The document should be labeled: "Report on Programmatic, Budgetary, and Commitment Overlap."

6. Content and Form of Application Submission

Applicants are required to include all of the following documents with their application package at www.grants.gov.

7. Letter of Intent

LOI is not requested or required as part of the application for this NOFO.

8. Table of Contents

(There is no page limit. The table of contents is not included in the project narrative page limit.): The applicant must provide, as a separate attachment, the "Table of Contents" for the entire submission package.
Provide a detailed table of contents for the entire submission package that includes all of the documents in the application and headings in the "Project Narrative" section. Name the file "Table of Contents" and upload it as a PDF file under "Other Attachment Forms" at www.grants.gov.

9. Project Abstract Summary

(Maximum 1 page)
A project abstract is included on the mandatory documents list and must be submitted at www.grants.gov. The project abstract must be a self-contained, brief summary of the proposed project including the purpose and outcomes. This summary must not include any proprietary or confidential information. Applicants must enter the summary in the "Project Abstract Summary" text box at www.grants.gov.

10. Project Narrative

(Unless specified in the "H. Other Information" section, maximum of 20 pages, single spaced, 12 point font, 1-inch margins, number all pages. This includes the work plan. Content beyond the specified page number will not be reviewed.)
Applicants must submit a Project Narrative with the application forms. Applicants must name this file "Project Narrative" and upload it at www.grants.gov. The Project Narrative must include **all** of the following headings (including subheadings): Background, Approach,

Applicant Evaluation and Performance Measurement Plan, Organizational Capacity of Applicants to Implement the Approach, and Work Plan. The Project Narrative must be succinct, self-explanatory, and in the order outlined in this section. It must address outcomes and activities to be conducted over the entire period of performance as identified in the CDC Project Description section. Applicants should use the federal plain language guidelines and Clear Communication Index to respond to this Notice of Funding Opportunity. Note that recipients should also use these tools when creating public communication materials supported by this NOFO. Failure to follow the guidance and format may negatively impact scoring of the application.

a. Background

Applicants must provide a description of relevant background information that includes the context of the problem (See CDC Background).

b. Approach

i. Purpose

Applicants must describe in 2-3 sentences specifically how their application will address the public health problem as described in the CDC Background section.

ii. Outcomes

Applicants must clearly identify the outcomes they expect to achieve by the end of the project period, as identified in the logic model in the Approach section of the CDC Project Description. Outcomes are the results that the program intends to achieve and usually indicate the intended direction of change (e.g., increase, decrease).

iii. Strategies and Activities

Applicants must provide a clear and concise description of the strategies and activities they will use to achieve the period of performance outcomes. Applicants must select existing evidence-based strategies that meet their needs, or describe in the Applicant Evaluation and Performance Measurement Plan how these strategies will be evaluated over the course of the project period. See the Strategies and Activities section of the CDC Project Description.

1. Collaborations

Applicants must describe how they will collaborate with programs and organizations either internal or external to CDC. Applicants must address the Collaboration requirements as described in the CDC Project Description.

2. Target Populations and Health Disparities

Applicants must describe the specific target population(s) in their jurisdiction and explain how such a target will achieve the goals of the award and/or alleviate health disparities. The applicants must also address how they will include specific populations that can benefit from the program that is described in the Approach section. Applicants must address the Target Populations and Health Disparities requirements as described in the CDC Project Description.

c. Applicant Evaluation and Performance Measurement Plan

Applicants must provide an evaluation and performance measurement plan that demonstrates how the recipient will fulfill the requirements described in the CDC Evaluation and Performance Measurement and Project Description sections of this NOFO. At a minimum, the plan must describe:

- How applicant will collect the performance measures, respond to the evaluation questions, and use evaluation findings for continuous program quality improvement. The Paperwork Reduction Act of 1995 (PRA): Applicants are advised that any activities involving information collections (e.g., surveys, questionnaires, applications, audits, data requests, reporting, recordkeeping and disclosure requirements) from 10 or more individuals or non-Federal entities, including State and local governmental agencies, and funded or sponsored by the Federal Government are subject to review and approval by the Office of Management and Budget. For further information about CDC's requirements under PRA see http://www.hhs.gov/ ocio/policy/collection/.
- How key program partners will participate in the evaluation and performance measurement planning processes.
- Available data sources, feasibility of collecting appropriate evaluation and performance data, data management plan (DMP), and other relevant data information (e.g., performance measures proposed by the applicant).

Where the applicant chooses to, or is expected to, take on specific evaluation studies, they should be directed to:

- Describe the type of evaluations (i.e., process, outcome, or both).
- Describe key evaluation questions to be addressed by these evaluations.
- Describe other information (e.g., measures, data sources).

Recipients will be required to submit a more detailed Evaluation and Performance Measurement plan (including the DMP elements) within the first 6 months of award, as described in the Reporting Section of this NOFO.

d. Organizational Capacity of Applicants to Implement the Approach

Applicants must address the organizational capacity requirements as described in the CDC Project Description.

11. Work Plan

(Included in the Project Narrative's page limit)
Applicants must prepare a work plan consistent with the CDC Project Description Work Plan section. The work plan integrates and delineates more specifically how the recipient plans to carry out achieving the period of performance outcomes, strategies and activities, evaluation

and performance measurement.

12. Budget Narrative

Applicants must submit an itemized budget narrative. When developing the budget narrative, applicants must consider whether the proposed budget is reasonable and consistent with the purpose, outcomes, and program strategy outlined in the project narrative. The budget must include:

- Salaries and wages
- Fringe benefits
- Consultant costs
- Equipment
- Supplies
- Travel
- Other categories
- Contractual costs
- Total Direct costs
- Total Indirect costs

Indirect costs could include the cost of collecting, managing, sharing and preserving data. Indirect costs on grants awarded to foreign organizations and foreign public entities and performed fully outside of the territorial limits of the U.S. may be paid to support the costs of compliance with federal requirements at a fixed rate of eight percent of MTDC exclusive of tuition and related fees, direct expenditures for equipment, and subawards in excess of $25,000. Negotiated indirect costs may be paid to the American University, Beirut, and the World Health Organization.
If applicable and consistent with the cited statutory authority for this announcement, applicant entities may use funds for activities as they relate to the intent of this NOFO to meet national standards or seek health department accreditation through the Public Health Accreditation Board (see: http://www.phaboard.org). Applicant entities to whom this provision applies include state, local, territorial governments (including the District of Columbia, the Commonwealth of Puerto Rico, the Virgin Islands, the Commonwealth of the Northern Marianna Islands, American Samoa, Guam, the Federated States of Micronesia, the Republic of the Marshall Islands, and the Republic of Palau), or their bona fide agents, political subdivisions of states (in consultation with states), federally recognized or state-recognized American Indian or Alaska Native tribal governments, and American Indian or Alaska Native tribally designated organizations. Activities include those that enable a public health organization to deliver public health services such as activities that ensure a capable and qualified workforce, up-to-date information systems, and the capability to assess and respond to public health needs. Use of these funds must focus on achieving a minimum of one national standard that supports the intent of the NOFO. Proposed activities must be included in the budget narrative and must indicate which standards will be addressed.
Vital records data, including births and deaths, are used to inform public health program and policy decisions. If applicable and consistent with the cited statutory authority for this NOFO,

applicant entities are encouraged to collaborate with and support their jurisdiction's vital records office (VRO) to improve vital records data timeliness, quality and access, and to advance public health goals. Recipients may, for example, use funds to support efforts to build VRO capacity through partnerships; provide technical and/or financial assistance to improve vital records timeliness, quality or access; or support vital records improvement efforts, as approved by CDC.
Applicants must name this file "Budget Narrative" and upload it as a PDF file at www.grants.gov. If requesting indirect costs in the budget, a copy of the indirect cost-rate agreement is required. If the indirect costs are requested, include a copy of the current negotiated federal indirect cost rate agreement or a cost allocation plan approval letter for those Recipients under such a plan. Applicants must name this file "Indirect Cost Rate" and upload it at www.grants.gov.

13. Funds Tracking

Proper fiscal oversight is critical to maintaining public trust in the stewardship of federal funds. Effective October 1, 2013, a new HHS policy on subaccounts requires the CDC to set up payment subaccounts within the Payment Management System (PMS) for all new grant awards. Funds awarded in support of approved activities and drawdown instructions will be identified on the Notice of Award in a newly established PMS subaccount (P subaccount). Recipients will be required to draw down funds from award-specific accounts in the PMS. Ultimately, the subaccounts will provide recipients and CDC a more detailed and precise understanding of financial transactions. The successful applicant will be required to track funds by P-accounts/sub accounts for each project/cooperative agreement awarded. Applicants are encouraged to demonstrate a record of fiscal responsibility and the ability to provide sufficient and effective oversight. Financial management systems must meet the requirements as described 2 CFR 200 which include, but are not limited to, the following:

- Records that identify adequately the source and application of funds for federally-funded activities.
- Effective control over, and accountability for, all funds, property, and other assets.
- Comparison of expenditures with budget amounts for each Federal award.
- Written procedures to implement payment requirements.
- Written procedures for determining cost allowability.
- Written procedures for financial reporting and monitoring.

14. Intergovernmental Review

Executive Order 12372 does not apply to this program.

15. Pilot Program for Enhancement of Employee Whistleblower Protections

Pilot Program for Enhancement of Employee Whistleblower Protections: All applicants will be subject to a term and condition that applies the terms of 48 Code of Federal Regulations (CFR) section 3.908 to the award and requires that recipients inform their employees in writing

(in the predominant native language of the workforce) of employee whistleblower rights and protections under 41 U.S.C. 4712.

16. Copyright Interests Provisions

This provision is intended to ensure that the public has access to the results and accomplishments of public health activities funded by CDC. Pursuant to applicable grant regulations and CDC's Public Access Policy, Recipient agrees to submit into the National Institutes of Health (NIH) Manuscript Submission (NIHMS) system an electronic version of the final, peer-reviewed manuscript of any such work developed under this award upon acceptance for publication, to be made publicly available no later than 12 months after the official date of publication. Also at the time of submission, Recipient and/or the Recipient's submitting author must specify the date the final manuscript will be publicly accessible through PubMed Central (PMC). Recipient and/or Recipient's submitting author must also post the manuscript through PMC within twelve (12) months of the publisher's official date of final publication; however the author is strongly encouraged to make the subject manuscript available as soon as possible. The recipient must obtain prior approval from the CDC for any exception to this provision.

The author's final, peer-reviewed manuscript is defined as the final version accepted for journal publication, and includes all modifications from the publishing peer review process, and all graphics and supplemental material associated with the article. Recipient and its submitting authors working under this award are responsible for ensuring that any publishing or copyright agreements concerning submitted articles reserve adequate right to fully comply with this provision and the license reserved by CDC. The manuscript will be hosted in both PMC and the CDC Stacks institutional repository system. In progress reports for this award, recipient must identify publications subject to the CDC Public Access Policy by using the applicable NIHMS identification number for up to three (3) months after the publication date and the PubMed Central identification number (PMCID) thereafter.

17. Funding Restrictions

Restrictions that must be considered while planning the programs and writing the budget are:

- Recipients may not use funds for research.
- Recipients may not use funds for clinical care except as allowed by law.
- Recipients may use funds only for reasonable program purposes, including personnel, travel, supplies, and services.
- Generally, recipients may not use funds to purchase furniture or equipment. Any such proposed spending must be clearly identified in the budget.
- Reimbursement of pre-award costs generally is not allowed, unless the CDC provides written approval to the recipient.
- Other than for normal and recognized executive-legislative relationships, no funds may be used for:
    - publicity or propaganda purposes, for the preparation, distribution, or use of any material designed to support or defeat the enactment of legislation before any

legislative body
    - the salary or expenses of any grant or contract recipient, or agent acting for such recipient, related to any activity designed to influence the enactment of legislation, appropriations, regulation, administrative action, or Executive order proposed or pending before any legislative body
- See Additional Requirement (AR) 12 for detailed guidance on this prohibition and additional guidance on lobbying for CDC recipients.
- The direct and primary recipient in a cooperative agreement program must perform a substantial role in carrying out project outcomes and not merely serve as a conduit for an award to another party or provider who is ineligible.
- In accordance with the United States Protecting Life in Global Health Assistance policy, all non-governmental organization (NGO) applicants acknowledge that foreign NGOs that receive funds provided through this award, either as a prime recipient or subrecipient, are strictly prohibited, regardless of the source of funds, from performing abortions as a method of family planning or engaging in any activity that promotes abortion as a method of family planning, or to provide financial support to any other foreign non-governmental organization that conducts such activities. See Additional Requirement (AR) 35 for applicability (https://www.cdc.gov/grants/additionalrequirements/ar-35.html).

18. Data Management Plan

As identified in the Evaluation and Performance Measurement section, applications involving data collection must include a Data Management Plan (DMP) as part of their evaluation and performance measurement plan. The DMP is the applicant's assurance of the quality of the public health data through the data's lifecycle and plans to deposit data in a repository to preserve and to make the data accessible in a timely manner. See web link for additional information:
https://www.cdc.gov/grants/additionalrequirements/ar-25.html

19. Other Submission Requirements

a. Electronic Submission:

Applications must be submitted electronically by using the forms and instructions posted for this notice of funding opportunity at www.grants.gov. Applicants can complete the application package using Workspace, which allows forms to be filled out online or offline. All application attachments must be submitted using a PDF file format. Instructions and training for using Workspace can be found at www.grants.gov under the "Workspace Overview" option.
If Internet access is not available or if the forms cannot be accessed online, applicants may contact the OGS TIMS staff at 770- 488-2700 or by e-mail at ogstims@cdc.gov, Monday through Friday, 7:30 a.m.–4:30 p.m., except federal holidays. Electronic applications will be considered successful if they are available to OGS TIMS staff for processing

from www.grants.gov on the deadline date.

b. Tracking Number: Applications submitted through www.grants.gov are time/date stamped electronically and assigned a tracking number. The applicant's Authorized Organization Representative (AOR) will be sent an e-mail notice of receipt when www.grants.gov receives the application. The tracking number documents that the application has been submitted and initiates the required electronic validation process before the application is made available to CDC.

c. Validation Process: Application submission is not concluded until the validation process is completed successfully. After the application package is submitted, the applicant will receive a "submission receipt" e-mail generated by www.grants.gov. A second e-mail message to applicants will then be generated by www.grants.gov that will either validate or reject the submitted application package. This validation process may take as long as two business days. Applicants are strongly encouraged to check the status of their application to ensure that submission of their package has been completed and no submission errors have occurred. Applicants also are strongly encouraged to allocate ample time for filing to guarantee that their application can be submitted and validated by the deadline published in the NOFO. Non-validated applications will not be accepted after the published application deadline date.

If you do not receive a "validation" e-mail within two business days of application submission, please contact www.grants.gov. For instructions on how to track your application, refer to the e-mail message generated at the time of application submission or the Grants.gov Online User Guide.
https:// www.grants.gov/help/html/help/index.htm? callingApp=custom#t=
Get_Started%2FGet_Started. htm

d. Technical Difficulties: If technical difficulties are encountered at www.grants.gov, applicants should contact Customer Service at www.grants.gov. The www.grants.gov Contact Center is available 24 hours a day, 7 days a week, except federal holidays. The Contact Center is available by phone at 1-800-518-4726 or by e-mail at support@grants.gov. Application submissions sent by e-mail or fax, or on CDs or thumb drives will not be accepted. Please note that www.grants.gov is managed by HHS.

e. Paper Submission: If technical difficulties are encountered at www.grants.gov, applicants should call the www.grants.gov Contact Center at 1-800-518-4726 or e-mail them at support@grants.gov for assistance. After consulting with the Contact Center, if the technical difficulties remain unresolved and electronic submission is not possible, applicants may e-mail CDC GMO/GMS, before the deadline, and request permission to submit a paper application. Such requests are handled on a case-by-case basis.
An applicant's request for permission to submit a paper application must:

1. Include the www.grants.gov case number assigned to the inquiry
2. Describe the difficulties that prevent electronic submission and the efforts taken with the www.grants.gov Contact Center to submit electronically; and
3. Be received via e-mail to the GMS/GMO listed below at least three calendar days before

the application deadline. Paper applications submitted without prior approval will not be considered.

If a paper application is authorized, OGS will advise the applicant of specific instructions for submitting the application (e.g., original and two hard copies of the application by U.S. mail or express delivery service).

E. Review and Selection Process

1. Review and Selection Process: Applications will be reviewed in three phases

a. Phase 1 Review

All applications will be initially reviewed for eligibility and completeness by CDC Office of Grants Services. Complete applications will be reviewed for responsiveness by the Grants Management Officials and Program Officials. Non-responsive applications will not advance to Phase II review. Applicants will be notified that their applications did not meet eligibility and/or published submission requirements.

b. Phase II Review

A review panel will evaluate complete, eligible applications in accordance with the criteria below.
i. Approach
ii. Evaluation and Performance Measurement
iii. Applicant's Organizational Capacity to Implement the Approach
Not more than thirty days after the Phase II review is completed, applicants will be notified electronically if their application does not meet eligibility or published submission requirements.

i. Approach Maximum Points:40

Evaluate the extent to which the applicant addresses the items below.

- How well does the applicant describe an overall strategy, activities and outcomes that are consistent with the period of performance outcomes described in the CDC Project Description and logic model?
- How well does the applicant describe strategies and activities that are achievable, appropriate and evidence-based to achieve the outcomes of the project?
- To what extent does the applicant include plans to implement specific strategies to address noted challenges to achieving the long-term goals of this NOFO?
- How well does the applicant show that the proposed use of funds is an efficient and effective way to implement the strategies and activities and attain the period of performance outcomes?
- To what extent does the applicant present a work plan that is aligned with the strategies/activities, outcomes, and performance measures in the approach and is consistent with the content and format proposed by CDC?

ii. Evaluation and Performance Measurement Maximum Points:30

Evaluate the extent to which the applicant addresses the items below.

- To what extent does the applicant demonstrate the ability to collect data on the process and outcome performance measures indicated by CDC in the project description, and provide timely and complete reporting?
- To what extent does the applicant describe clear monitoring and evaluation procedures and how evaluation and performance measurement will be incorporated into planning, implementation, and reporting of project activities, as well as to address the necessary adjustment of program activities based on monitoring information?
- To what extent does the applicant describe how evaluation and performance measurement will contribute to developing an evidence base for immunization programs that lack a strong effectiveness evidence base?
- To what extent does the applicant demonstrate a system able to generate financial and program reports to show timely disbursement of funds, and progress towards achieving the outcomes of the project?

iii. Applicant's Organizational Capacity to Implement the Approach Maximum Points:30

Evaluate the extent to which the applicant addresses the items below.

- How well does the applicant demonstrate experience collaborating in public health programs with priority country national governments?
- How well does the applicant demonstrate experience collaborating with multiple polio eradication and measles elimination partners including BMGF, USAID, UNICEF, Rotary, Gavi and others?
- How well does the applicant demonstrate accomplishments in addressing and implementing public health program needs in complex settings, including demonstrated capacity to mobilize sufficiently culturally competent personnel to achieve outcomes?
- To what extent are key staff involved in the project qualified to provide leadership, technical and management expertise required for effective and efficient program implementation? (Reference Key Staff Curriculum Vitae)
- To what extent does the applicant provide a staffing plan, organizational chart, and project management structure that will be sufficient to meet the goals of the proposed project and which clearly defines staff roles?
- To what extent does the applicant demonstrate the ability to manage financial reporting, budget management and administration of personnel, as well as management of grants and contracts?

Budget

The budget will not be scored but will be reviewed. CDC programs must assess whether the budget aligns with the proposed workplan. For additional guidance, check with the Center for Global Health extramural program office, GMO or GMS.

c. Phase III Review

Only 1 application is expected for this single eligibility single award NOFO. Should additional applications be received, they will be deemed non-responsive and will not be reviewed.

Review of risk posed by applicants.

Prior to making a Federal award, CDC is required by 31 U.S.C. 3321 and 41 U.S.C. 2313 to review information available through any OMB-designated repositories of government-wide eligibility qualification or financial integrity information as appropriate. See also suspension and debarment requirements at 2 CFR parts 180 and 376.

In accordance 41 U.S.C. 2313, CDC is required to review the non-public segment of the OMB-designated integrity and performance system accessible through SAM (currently the Federal Recipient Performance and Integrity Information System (FAPIIS)) prior to making a Federal award where the Federal share is expected to exceed the simplified acquisition threshold, defined in 41 U.S.C. 134, over the period of performance. At a minimum, the information in the system for a prior Federal award recipient must demonstrate a satisfactory record of executing programs or activities under Federal grants, cooperative agreements, or procurement awards; and integrity and business ethics. CDC may make a Federal award to a recipient who does not fully meet these standards, if it is determined that the information is not relevant to the current Federal award under consideration or there are specific conditions that can appropriately mitigate the effects of the non-Federal entity's risk in accordance with 45 CFR §75.207.

CDC's framework for evaluating the risks posed by an applicant may incorporate results of the evaluation of the applicant's eligibility or the quality of its application. If it is determined that a Federal award will be made, special conditions that correspond to the degree of risk assessed may be applied to the Federal award. The evaluation criteria is described in this Notice of Funding Opportunity.

In evaluating risks posed by applicants, CDC will use a risk-based approach and may consider any items such as the following:

(1) Financial stability;

(2) Quality of management systems and ability to meet the management standards prescribed in this part;

(3) History of performance. The applicant's record in managing Federal awards, if it is a prior recipient of Federal awards, including timeliness of compliance with applicable reporting requirements, conformance to the terms and conditions of previous Federal awards, and if applicable, the extent to which any previously awarded amounts will be expended prior to future awards;

(4) Reports and findings from audits performed under subpart F 45 CFR 75 or the reports and findings of any other available audits; and

(5) The applicant's ability to effectively implement statutory, regulatory, or other requirements imposed on non-Federal entities.

CDC must comply with the guidelines on government-wide suspension and debarment in 2 CFR part 180, and require non-Federal entities to comply with these provisions. These provisions restrict Federal awards, subawards and contracts with certain parties that are debarred, suspended or otherwise excluded from or ineligible for participation in Federal

programs or activities.

2. Announcement and Anticipated Award Dates

May 1, 2019

F. Award Administration Information

1. Award Notices

Recipients will receive an electronic copy of the Notice of Award (NOA) from CDC OGS. The NOA shall be the only binding, authorizing document between the recipient and CDC. The NOA will be signed by an authorized GMO and emailed to the Recipient Business Officer listed in application and the Program Director.

Any applicant awarded funds in response to this Notice of Funding Opportunity will be subject to the DUNS, SAM Registration, and Federal Funding Accountability And Transparency Act Of 2006 (FFATA) requirements.

Unsuccessful applicants will receive notification of these results by e-mail with delivery receipt or by U.S. mail.

2. Administrative and National Policy Requirements

Recipients must comply with the administrative and public policy requirements outlined in 45 CFR Part 75 and the HHS Grants Policy Statement, as appropriate.
Brief descriptions of relevant provisions are available at http://www.cdc.gov/grants/additionalrequirements/index.html#ui-id-17.
The HHS Grants Policy Statement is available at http://www.hhs.gov/sites/default/files/grants/grants/policies-regulations/hhsgps107.pdf.

- AR-8: Public Health System Reporting Requirements
- AR-10: Smoke-Free Workplace Requirements
- AR-11: Healthy People 2020
- AR-12: Lobbying Restrictions (June 2012)
- AR-14: Accounting System Requirements
- AR-15: Proof of Non-profit Status
- AR-25: Data Management and Access

The full text of the Uniform Administrative Requirements, Cost Principles, and Audit Requirements for HHS Awards, 45 CFR 75, can be found at: https://www.ecfr.gov/cgi-bin/text-idx?node=pt45.1.75

3. Reporting

Reporting provides continuous program monitoring and identifies successes and challenges

that recipients encounter throughout the project period. Also, reporting is a requirement for recipients who want to apply for yearly continuation of funding. Reporting helps CDC and recipients because it:

- Helps target support to recipients;
- Provides CDC with periodic data to monitor recipient progress toward meeting the Notice of Funding Opportunity outcomes and overall performance;
- Allows CDC to track performance measures and evaluation findings for continuous quality and program improvement throughout the period of performance and to determine applicability of evidence-based approaches to different populations, settings, and contexts; and
- Enables CDC to assess the overall effectiveness and influence of the NOFO.

The table below summarizes required and optional reports. All required reports must be sent electronically to GMS listed in the "Agency Contacts" section of the NOFO copying the CDC Project Officer.

Report	**When?**	**Required?**
Recipient Evaluation and Performance Measurement Plan, including Data Management Plan (DMP)	6 months into award	Yes
Annual Performance Report (APR)	No later than 120 days before end of budget period. Serves as yearly continuation application.	Yes
Data on Performance Measures	Frequency will depend on specific measures mutually agreed upon in the Evaluation and Performance Measurement Plan, but at least semi-annually.	YES
Federal Financial Reporting Forms	90 days after end of calendar quarter in which budget period ends	Yes
Final Performance and Financial Report	90 days after end of period of performance.	Yes
Payment Management System (PMS) Reporting	Quarterly reports due January 30th;	Yes

	April 30th; July 30th and October 30th	

a. Recipient Evaluation and Performance Measurement Plan (required)
With support from CDC, recipients must elaborate on their initial applicant evaluation and performance measurement plan. This plan must be no more than 20 pages; recipients must submit the plan 6 months into the award. HHS/CDC will review and approve the recipient's monitoring and evaluation plan to ensure that it is appropriate for the activities to be undertaken as part of the agreement, for compliance with the monitoring and evaluation guidance established by HHS/CDC, or other guidance otherwise applicable to this Agreement.

Recipient Evaluation and Performance Measurement Plan (required): This plan should provide additional detail on the following:

Performance Measurement

• Performance measures and targets
• The frequency that performance data are to be collected.
• How performance data will be reported.
• How quality of performance data will be assured.
• How performance measurement will yield findings to demonstrate progress towards achieving NOFO goals (e.g., reaching target populations or achieving expected outcomes).
• Dissemination channels and audiences.
• Other information requested as determined by the CDC program.

Evaluation

• The types of evaluations to be conducted (e.g. process or outcome evaluations).
• The frequency that evaluations will be conducted.
• How evaluation reports will be published on a publically available website.
• How evaluation findings will be used to ensure continuous quality and program improvement.
• How evaluation will yield findings to demonstrate the value of the NOFO (e.g., effect on improving public health outcomes, effectiveness of NOFO, cost-effectiveness or cost-benefit).
• Dissemination channels and audiences.

HHS/CDC or its designee will also undertake monitoring and evaluation of the defined activities within the agreement. The recipient must ensure reasonable access by HHS/CDC or its designee to all necessary sites, documentation, individuals and information to monitor, evaluate and verify the appropriate implementation the activities and use of HHS/CDC funding under this Agreement.

b. Annual Performance Report (APR) (required)

The recipient must submit the APR via www.Grantsolutions.gov no later than120 days prior to the end of the budget period. This report must not exceed 45 pages excluding administrative reporting. Attachments are not allowed, but web links are allowed.
This report must include the following:

- **Performance Measures:** Recipients must report on performance measures for each budget period and update measures, if needed.
- **Evaluation Results:** Recipients must report evaluation results for the work completed to date (including findings from process or outcome evaluations).
- **Work Plan:** Recipients must update work plan each budget period to reflect any changes in period of performance outcomes, activities, timeline, etc.
- **Successes**
    - Recipients must report progress on completing activities and progress towards achieving the period of performance outcomes described in the logic model and work plan.
    - Recipients must describe any additional successes (e.g. identified through evaluation results or lessons learned) achieved in the past year.
    - Recipients must describe success stories.
- **Challenges**
    - Recipients must describe any challenges that hindered or might hinder their ability to complete the work plan activities and achieve the period of performance outcomes.
    - Recipients must describe any additional challenges (e.g., identified through evaluation results or lessons learned) encountered in the past year.
- **CDC Program Support to Recipients**
    - Recipients must describe how CDC could help them overcome challenges to complete activities in the work plan and achieving period of performance outcomes.
- **Administrative Reporting** (No page limit)
    - SF-424A Budget Information-Non-Construction Programs.
    - Budget Narrative – Must use the format outlined in "Content and Form of Application Submission, Budget Narrative" section.
    - Indirect Cost Rate Agreement.

For year 2 and beyond of the award recipients may request that as much as 75% of their estimated unobligated funds be carried over into the next budget period.

The recipients must submit the Annual Performance Report via www.Grantsolutions.gov no later than 120 days prior to the end of the budget period.

c. Performance Measure Reporting (optional)
CDC programs may require more frequent reporting of performance measures than annually in the APR. If this is the case, CDC programs must specify reporting frequency, data fields, and

format for recipients at the beginning of the award period.

Performance Measure Reporting will be required semi-annually; specific measures for reporting will be determined in the agreed-upon Performance Measurement plan, to be finalized within 6 months of award.

d. Federal Financial Reporting (FFR) (required)
The annual FFR form (SF-425) is required and must be submitted 90 days after the end of the budget period. The report must include only those funds authorized and disbursed during the timeframe covered by the report. The final FFR must indicate the exact balance of unobligated funds, and may not reflect any unliquidated obligations. There must be no discrepancies between the final FFR expenditure data and the Payment Management System's (PMS) cash transaction data. Failure to submit the required information by the due date may adversely affect the future funding of the project. If the information cannot be provided by the due date, recipients are required to submit a letter of explanation to OGS and include the date by which the Grants Officer will receive information.

e. Final Performance and Financial Report (required)
This report is due 90 days after the end of the period of performance. CDC programs must indicate that this report should not exceed 40 pages. This report covers the entire period of performance and can include information previously reported in APRs. At a minimum, this report must include the following:

- Performance Measures – Recipients must report final performance data for all process and outcome performance measures.
- Evaluation Results – Recipients must report final evaluation results for the period of performance for any evaluations conducted.
- Impact/Results/Success Stories – Recipients must use their performance measure results and their evaluation findings to describe the effects or results of the work completed over the project period, and can include some success stories.
- A final Data Management Plan that includes the location of the data collected during the funded period, for example, repository name and link data set(s)
- Additional forms as described in the Notice of Award (e.g., Equipment Inventory Report, Final Invention Statement).

4. Federal Funding Accountability and Transparency Act of 2006 (FFATA)

Federal Funding Accountability and Transparency Act of 2006 (FFATA), P.L. 109–282, as amended by section 6202 of P.L. 110–252 requires full disclosure of all entities and organizations receiving Federal funds including awards, contracts, loans, other assistance, and payments through a single publicly accessible Web site, http://www.USASpending.gov. Compliance with this law is primarily the responsibility of the Federal agency. However, two elements of the law require information to be collected and reported by applicants: 1) information on executive compensation when not already reported through the SAM, and 2)

similar information on all sub-awards/subcontracts/consortiums over $25,000.
For the full text of the requirements under the FFATA and HHS guidelines, go to:

- https://www.gpo.gov/fdsys/pkg/PLAW-109publ282/pdf/PLAW-109publ282.pdf,
- https://www. fsrs.gov/documents /ffata_legislation_ 110_252.pdf
- http://www.hhs.gov/grants/grants/grants-policies-regulations/index.html#FFATA.

5. Reporting of Foreign Taxes (International/Foreign projects only)

A. Valued Added Tax (VAT) and Customs Duties – Customs and import duties, consular fees, customs surtax, valued added taxes, and other related charges are hereby authorized as an allowable cost for costs incurred for non-host governmental entities operating where no applicable tax exemption exists. This waiver does not apply to countries where a bilateral agreement (or similar legal document) is already in place providing applicable tax exemptions and it is not applicable to Ministries of Health. Successful applicants will receive information on VAT requirements via their Notice of Award.

B. The U.S. Department of State requires that agencies collect and report information on the amount of taxes assessed, reimbursed and not reimbursed by a foreign government against commodities financed with funds appropriated by the U.S. Department of State, Foreign Operations and Related Programs Appropriations Act (SFOAA) ("United States foreign assistance funds"). Outlined below are the specifics of this requirement:

1) Annual Report: The recipient must submit a report on or before November 16 for each foreign country on the amount of foreign taxes charged, as of September 30 of the same year, by a foreign government on commodity purchase transactions valued at 500 USD or more financed with United States foreign assistance funds under this grant during the prior United States fiscal year (October 1 – September 30), and the amount reimbursed and unreimbursed by the foreign government. [Reports are required even if the recipient did not pay any taxes during the reporting period.]

2) Quarterly Report: The recipient must quarterly submit a report on the amount of foreign taxes charged by a foreign government on commodity purchase transactions valued at 500 USD or more financed with United States foreign assistance funds under this grant. This report shall be submitted no later than two weeks following the end of each quarter: April 15, July 15, October 15 and January 15.

3) Terms: For purposes of this clause:
"Commodity" means any material, article, supplies, goods, or equipment;
"Foreign government" includes any foreign government entity;
"Foreign taxes" means value-added taxes and custom duties assessed by a foreign government on a commodity. It does not include foreign sales taxes.

4) Where: Submit the reports to the Director and Deputy Director of the CDC office in the country(ies) in which you are carrying out the activities associated with this cooperative agreement. In countries where there is no CDC office, send reports to VATreporting@cdc.gov.

5) Contents of Reports: The reports must contain:
a. recipient name;
b. contact name with phone, fax, and e-mail;
c. agreement number(s) if reporting by agreement(s);
d. reporting period;
e. amount of foreign taxes assessed by each foreign government;
f. amount of any foreign taxes reimbursed by each foreign government;
g. amount of foreign taxes unreimbursed by each foreign government.

6) Subagreements. The recipient must include this reporting requirement in all applicable subgrants and other subagreements.

G. Agency Contacts

CDC encourages inquiries concerning this notice of funding opportunity.

Program Office Contact

For programmatic technical assistance, contact:

Sandy Templeton, Project Officer
Department of Health and Human Services
Centers for Disease Control and Prevention
Center for Global Health / Global Immunization Division

1600 Clifton Road NE, Bldg 24, H24-2

Atlanta, GA 30329

Telephone: (404) 718-8795
Email: ynd3@cdc.gov

Grants Staff Contact

For **financial, awards management, or budget assistance,** contact:

Rhonda Latimer, Grants Management Specialist
Department of Health and Human Services
Office of Grants Services
2920 Brandywine Road, MS K75

Atlanta, GA 30341

Telephone: (770) 488-1647
Email: ito1@cdc.gov

For assistance with **submission difficulties related to** www.grants.gov, contact the Contact Center by phone at 1-800-518-4726.
Hours of Operation: 24 hours a day, 7 days a week, except on federal holidays.

For all other **submission** questions, contact:
Technical Information Management Section
Department of Health and Human Services
CDC Office of Financial Resources
Office of Grants Services
2920 Brandywine Road, MS E-14
Atlanta, GA 30341
Telephone: 770-488-2700
Email: ogstims@cdc.gov

CDC Telecommunications for persons with hearing loss is available at: TTY 1-888-232-6348

H. Other Information

Following is a list of acceptable attachments **applicants** can upload as PDF files as part of their application at www.grants.gov. Applicants may not attach documents other than those listed; if other documents are attached, applications will not be reviewed.

- Project Abstract
- Project Narrative
- Budget Narrative
- CDC Assurances and Certifications
- Report on Programmatic, Budgetary and Commitment Overlap
- Table of Contents for Entire Submission

For international NOFOs:

- SF424
- SF424A
- Funding Preference Deliverables

Optional attachments, as determined by CDC programs:

- Resumes / CVs
- Organization Charts

I. Glossary

Activities: The actual events or actions that take place as a part of the program.
Administrative and National Policy Requirements, Additional Requirements (ARs): Administrative requirements found in 45 CFR Part 75 and other requirements mandated by statute or CDC policy. All ARs are listed in the Template for CDC programs. CDC programs must indicate which ARs are relevant to the NOFO; recipients must comply with the ARs listed in the NOFO. To view brief descriptions of relevant provisions, see http:// www.cdc.gov/ grants/ additional requirements/ index.html. Note that 2 CFR 200 supersedes the administrative requirements (A-110 & A-102), cost principles (A-21, A-87 & A-122) and audit requirements (A-50, A-89 & A-133).
Approved but Unfunded: Approved but unfunded refers to applications recommended for approval during the objective review process; however, they were not recommended for funding by the program office and/or the grants management office.
Assitance Listings (CFDA): A government-wide compendium published by the General Services Administration (available on-line in searchable format as well as in printable format as a .pdf file) that describes domestic assistance programs administered by the Federal Government.
Assistance Listings (CFDA) Number: A unique number assigned to each program and NOFO throughout its lifecycle that enables data and funding tracking and transparency
Award: Financial assistance that provides support or stimulation to accomplish a public purpose. Awards include grants and other agreements (e.g., cooperative agreements) in the form of money, or property in lieu of money, by the federal government to an eligible applicant.
Budget Period or Budget Year: The duration of each individual funding period within the project period. Traditionally, budget periods are 12 months or 1 year.
Carryover: Unobligated federal funds remaining at the end of any budget period that, with the approval of the GMO or under an automatic authority, may be carried over to another budget period to cover allowable costs of that budget period either as an offset or additional authorization. Obligated but liquidated funds are not considered carryover.
CDC Assurances and Certifications: Standard government-wide grant application forms.
Competing Continuation Award: A financial assistance mechanism that adds funds to a grant and adds one or more budget periods to the previously established period of performance (i.e., extends the "life" of the award).
Continuous Quality Improvement: A system that seeks to improve the provision of services with an emphasis on future results.
Contracts: An award instrument used to acquire (by purchase, lease, or barter) property or services for the direct benefit or use of the Federal Government.
Cooperative Agreement: A financial assistance award with the same kind of interagency relationship as a grant except that it provides for substantial involvement by the federal agency funding the award. Substantial involvement means that the recipient can expect federal programmatic collaboration or participation in carrying out the effort under the award.
Cost Sharing or Matching: Refers to program costs not borne by the Federal Government but by the recipients. It may include the value of allowable third-party, in-kind contributions, as well as expenditures by the recipient.

Direct Assistance: A financial assistance mechanism, which must be specifically authorized by statute, whereby goods or services are provided to recipients in lieu of cash. DA generally involves the assignment of federal personnel or the provision of equipment or supplies, such as vaccines. DA is primarily used to support payroll and travel expenses of CDC employees assigned to state, tribal, local, and territorial (STLT) health agencies that are recipients of grants and cooperative agreements. Most legislative authorities that provide financial assistance to STLT health agencies allow for the use of DA. http:// www.cdc.gov /grants /additionalrequirements /index.html.

DUNS: The Dun and Bradstreet (D&B) Data Universal Numbering System (DUNS) number is a nine-digit number assigned by Dun and Bradstreet Information Services. When applying for Federal awards or cooperative agreements, all applicant organizations must obtain a DUNS number as the Universal Identifier. DUNS number assignment is free. If requested by telephone, a DUNS number will be provided immediately at no charge. If requested via the Internet, obtaining a DUNS number may take one to two days at no charge. If an organization does not know its DUNS number or needs to register for one, visit Dun & Bradstreet at http://fedgov.dnb.com/ webform/displayHomePage.do.

Evaluation (program evaluation): The systematic collection of information about the activities, characteristics, and outcomes of programs (which may include interventions, policies, and specific projects) to make judgments about that program, improve program effectiveness, and/or inform decisions about future program development.

Evaluation Plan: A written document describing the overall approach that will be used to guide an evaluation, including why the evaluation is being conducted, how the findings will likely be used, and the design and data collection sources and methods. The plan specifies what will be done, how it will be done, who will do it, and when it will be done. The NOFO evaluation plan is used to describe how the recipient and/or CDC will determine whether activities are implemented appropriately and outcomes are achieved.

Federal Funding Accountability and Transparency Act of 2006 (FFATA): Requires that information about federal awards, including awards, contracts, loans, and other assistance and payments, be available to the public on a single website at www.USAspending.gov.

Fiscal Year: The year for which budget dollars are allocated annually. The federal fiscal year starts October 1 and ends September 30.

Grant: A legal instrument used by the federal government to transfer anything of value to a recipient for public support or stimulation authorized by statute. Financial assistance may be money or property. The definition does not include a federal procurement subject to the Federal Acquisition Regulation; technical assistance (which provides services instead of money); or assistance in the form of revenue sharing, loans, loan guarantees, interest subsidies, insurance, or direct payments of any kind to a person or persons. The main difference between a grant and a cooperative agreement is that in a grant there is no anticipated substantial programmatic involvement by the federal government under the award.

Grants.gov: A "storefront" web portal for electronic data collection (forms and reports) for federal grant-making agencies at www.grants.gov.

Grants Management Officer (GMO): The individual designated to serve as the HHS official responsible for the business management aspects of a particular grant(s) or cooperative agreement(s). The GMO serves as the counterpart to the business officer of the recipient organization. In this capacity, the GMO is responsible for all business management matters associated with the review, negotiation, award, and administration of grants and interprets

grants administration policies and provisions. The GMO works closely with the program or project officer who is responsible for the scientific, technical, and programmatic aspects of the grant.
Grants Management Specialist (GMS): A federal staff member who oversees the business and other non-programmatic aspects of one or more grants and/or cooperative agreements. These activities include, but are not limited to, evaluating grant applications for administrative content and compliance with regulations and guidelines, negotiating grants, providing consultation and technical assistance to recipients, post-award administration and closing out grants.
Health Disparities: Differences in health outcomes and their determinants among segments of the population as defined by social, demographic, environmental, or geographic category.
Health Equity: Striving for the highest possible standard of health for all people and giving special attention to the needs of those at greatest risk of poor health, based on social conditions.
Health Inequities: Systematic, unfair, and avoidable differences in health outcomes and their determinants between segments of the population, such as by socioeconomic status (SES), demographics, or geography.
Healthy People 2020: National health objectives aimed at improving the health of all Americans by encouraging collaboration across sectors, guiding people toward making informed health decisions, and measuring the effects of prevention activities.
Inclusion: Both the meaningful involvement of a community's members in all stages of the program process and the maximum involvement of the target population that the intervention will benefit. Inclusion ensures that the views, perspectives, and needs of affected communities, care providers, and key partners are considered.
Indirect Costs: Costs that are incurred for common or joint objectives and not readily and specifically identifiable with a particular sponsored project, program, or activity; nevertheless, these costs are necessary to the operations of the organization. For example, the costs of operating and maintaining facilities, depreciation, and administrative salaries generally are considered indirect costs.
Intergovernmental Review: Executive Order 12372 governs applications subject to Intergovernmental Review of Federal Programs. This order sets up a system for state and local governmental review of proposed federal assistance applications. Contact the state single point of contact (SPOC) to alert the SPOC to prospective applications and to receive instructions on the State's process. Visit the following web address to get the current SPOC list: https://www.whitehouse.gov/wp-content/uploads/2017/11/Intergovernmental_-Review-_SPOC_01_2018_OFFM.pdf.
Letter of Intent (LOI): A preliminary, non-binding indication of an organization's intent to submit an application.
Lobbying: Direct lobbying includes any attempt to influence legislation, appropriations, regulations, administrative actions, executive orders (legislation or other orders), or other similar deliberations at any level of government through communication that directly expresses a view on proposed or pending legislation or other orders, and which is directed to staff members or other employees of a legislative body, government officials, or employees who participate in formulating legislation or other orders. Grass roots lobbying includes efforts directed at inducing or encouraging members of the public to contact their elected representatives at the federal, state, or local levels to urge support of, or opposition to, proposed or pending legislative proposals.

Logic Model: A visual representation showing the sequence of related events connecting the activities of a program with the programs' desired outcomes and results.
Maintenance of Effort: A requirement contained in authorizing legislation, or applicable regulations that a recipient must agree to contribute and maintain a specified level of financial effort from its own resources or other non-government sources to be eligible to receive federal grant funds. This requirement is typically given in terms of meeting a previous base-year dollar amount.
Memorandum of Understanding (MOU) or Memorandum of Agreement (MOA): Document that describes a bilateral or multilateral agreement between parties expressing a convergence of will between the parties, indicating an intended common line of action. It is often used in cases where the parties either do not imply a legal commitment or cannot create a legally enforceable agreement.
Nonprofit Organization: Any corporation, trust, association, cooperative, or other organization that is operated primarily for scientific, educational, service, charitable, or similar purposes in the public interest; is not organized for profit; and uses net proceeds to maintain, improve, or expand the operations of the organization. Nonprofit organizations include institutions of higher educations, hospitals, and tribal organizations (that is, Indian entities other than federally recognized Indian tribal governments).
Notice of Award (NoA): The official document, signed (or the electronic equivalent of signature) by a Grants Management Officer that: (1) notifies the recipient of the award of a grant; (2) contains or references all the terms and conditions of the grant and Federal funding limits and obligations; and (3) provides the documentary basis for recording the obligation of Federal funds in the HHS accounting system.
Objective Review: A process that involves the thorough and consistent examination of applications based on an unbiased evaluation of scientific or technical merit or other relevant aspects of the proposal. The review is intended to provide advice to the persons responsible for making award decisions.
Outcome: The results of program operations or activitIes; the effects triggered by the program. For example, increased knowledge, changed attitudes or beliefs, reduced tobacco use, reduced morbidity and mortality.
Performance Measurement: The ongoing monitoring and reporting of program accomplishments, particularly progress toward pre-established goals, typically conducted by program or agency management. Performance measurement may address the type or level of program activities conducted (process), the direct products and services delivered by a program (outputs), or the results of those products and services (outcomes). A "program" may be any activity, project, function, or policy that has an identifiable purpose or set of objectives.
Period of performance –formerly known as the project period - : The time during which the recipient may incur obligations to carry out the work authorized under the Federal award. The start and end dates of the period of performance must be included in the Federal award.
Period of Performance Outcome: An outcome that will occur by the end of the NOFO's funding period
Plain Writing Act of 2010: The Plain Writing Act of 2010 requires that federal agencies use clear communication that the public can understand and use. NOFOs must be written in clear, consistent language so that any reader can understand expectations and intended outcomes of the funded program. CDC programs should use NOFO plain writing tips when writing NOFOs.
Program Strategies: Strategies are groupings of related activities, usually expressed as general

headers (e.g., Partnerships, Assessment, Policy) or as brief statements (e.g., Form partnerships, Conduct assessments, Formulate policies).
Program Official: Person responsible for developing the NOFO; can be either a project officer, program manager, branch chief, division leader, policy official, center leader, or similar staff member.
Public Health Accreditation Board (PHAB): A nonprofit organization that works to promote and protect the health of the public by advancing the quality and performance of public health departments in the U.S. through national public health department accreditation http://www.phaboard.org.
Social Determinants of Health: Conditions in the environments in which people are born, live, learn, work, play, worship, and age that affect a wide range of health, functioning, and quality-of-life outcomes and risks.
Statute: An act of the legislature; a particular law enacted and established by the will of the legislative department of government, expressed with the requisite formalities. In foreign or civil law any particular municipal law or usage, though resting for its authority on judicial decisions, or the practice of nations.
Statutory Authority: Authority provided by legal statute that establishes a federal financial assistance program or award.
System for Award Management (SAM): The primary vendor database for the U.S. federal government. SAM validates applicant information and electronically shares secure and encrypted data with federal agencies' finance offices to facilitate paperless payments through Electronic Funds Transfer (EFT). SAM stores organizational information, allowing www.grants.gov to verify identity and pre-fill organizational information on grant applications.
Technical Assistance: Advice, assistance, or training pertaining to program development, implementation, maintenance, or evaluation that is provided by the funding agency.
Work Plan: The summary of period of performance outcomes, strategies and activities, personnel and/or partners who will complete the activities, and the timeline for completion. The work plan will outline the details of all necessary activities that will be supported through the approved budget.

NOFO-specific Glossary and Acronyms	
GLOBAL IMMUNIZATION ACRONYMS	
AEFI	Adverse Events Following Immunization
AFENET	African Field Epidemiology Network
AFP	acute flaccid paralysis
ARC	American Red Cross
BMGF	Bill & Melinda Gates Foundation

CDC	U.S. Centers for Disease Control and Prevention
CRS	Congenital Rubellla Syndrome
cVDPV	circulating vaccine-derived poliovirus
DTP3	third dose of diphtheria–tetanus-pertussis vaccine
EMPHNET	Eastern Mediterranean Public Health Network
EPI	Expanded Programme on Immunization
EPMP	Evaluation and Performance Measurement Plan
FETP	Field Epidemiology Training Program
GAPIII	Global Action Plan for Poliovirus Containment
Gavi	Global Alliance for Vaccines and Immunization
GBS	Guillain-Barre syndrome
GIVS	Global Immunization Vision and Strategy
GPEI	Global Polio Eradication initiativehttp://polioeradication.org/who-we-are/gover nance/polio-oversight-board/.
GRISP	Global Routine Immunization Strategies and Practices
GVAP	Global Vaccine Action Plan
HAV	hepatitis A virus
HBc	hepatitis B core
HBV	hepatitis B virus
HBsAg	hepatitis B surface antigen
HepB3	third dose of hepatitis B vaccine
Hib3	third dose of *Haemophilus influenzae* type b vaccine
IDS	Integrated disease surveillance
IFRC	International Federation of Red Cross
IHR	International Health Regulations
IMB	Independent Monitoring Board
IDSR	Integrated Disease Surveillance and Response
IgA	immunoglobulin A

IgG	immunoglobulin G
IgM	immunoglobulin M
IMCI	Integrated Management of Childhood Illness
IPV	inactivated polio vaccine
IVB	Department of Immunization, Vaccines and Biologicals
IVD	Immunization and Vaccine Development
JRF	Joint Reporting Form
MCH	maternal and child health
MCV2	Measles-containing-vaccine-second-dose
MNT	maternal and neonatal tetanus
MoH	Ministry of Health
M&RI	Measles and Rubella Initiative
NCIRD	National Center for Immunization and Respiratory Diseases
NGO	Non-governmental organization
NIDs	National Immunization Days
NSTOP	National Stop Transmission of Polio
NT	neonatal tetanus
OPV	oral polio vaccine (live attenuated)
ORI	outbreak response immunization
OPV3	third dose of oral polio vaccine
PEI	Polio Eradication Initiative
RI	Routine immunization
RO	Regional Office
SIA	Supplementary Immunization Activity
SMS	Short Message Service
sNIDS	Sub-National Immunization Days
STOP	Stop Transmission of Polio
TEPHNET	Training Programs in Epidemiology and Public Health

	Interventions Network
TIP	Tailoring Immunization Programs
TT	tetanus toxoid
USAID	United States Agency for International Development
VAD(D)	Vitamin A Deficiency (Disorder)
UNICEF	United Nations Children's Fund
VAPP	vaccine-associated paralytic polio
VDPV	vaccine-derived poliovirus
VPD	Vaccine preventable disease
VVM	vaccine vial monitor
WHA	World Health Assembly
WHO	World Health Organization
WUENIC	WHO/UNICEF Estimates of National Immunization Coverage
YF	Yellow fever vaccine

GLOBAL IMMUNIZATION GLOSSARY

Acute Flaccid Paralysis (AFP): Any case with weakness or floppiness of the limbs of sudden onset, not due to trauma in a child less than 15 years of age.

Antibody: Protein molecules (immunoglobulin) produced by B lymphocytes to help eliminate an antigen

Antigen: A live or inactivated substance (e.g., protein, polysaccharide) capable of producing an immune response.

Cold chain: A system whereby vaccines or drugs are transported from the manufacturers to the point of administration at a specified temperature. For example, most vaccines used in the EPI are stored between 4°C and 8°C. This is referred to as the vaccine cold chain.

Cold life: The interval of time between the coldest point in a load stored in cold chain equipment (i.e. specimens or vaccine) passing –3°C and the warmest point reaching +10°C at a specific ambient temperature. WHO usually tests cold chain equipment (refrigerators, freezers, cold boxes and vaccine and specimen carriers) at ambient temperatures of 32°C and 43°C.

Elimination: The situation in a large geographical area in which endemic transmission of a disease agent has stopped and sustained transmission does not occur following the occurrence of an imported case; continued intervention measures are required.

Epidemiology: The study of the transmission, control and prevention of disease in a community or a group of persons.

Epidemiologically confirmed: A case that meets the clinical case definition and is linked

epidemiologically to a laboratory confirmed case.

Eradication: The interruption of transmission of a disease agent worldwide as a result of deliberate efforts; intervention methods may no longer be needed. Eradication represents the sum of successful elimination efforts in all countries.

Feedback: The process of routinely sending analyses and reports to the more peripheral levels of the surveillance system, particularly to the suppliers of data. Feedback may occur in the form of newsletters, bulletins, letters, memoranda, telephone calls, visits or any combination of these.

Immediately notifiable diseases: Those health events that should be reported "immediately" or within hours of detection. Usually these are public health emergencies and require immediate action (cholera, cerebrospinal meningitis, yellow fever, plague and hemorrhagic fevers).

Immunity: The ability of the human body to tolerate the presence of material indigenous to the body ("self"), and to eliminate foreign ("non-self") material. This discriminatory ability provides protection from infectious disease, since most microbes are identified as foreign by the immune system. Immunity to a microbe is usually indicted by the presence of antibody to that organism. Immunity is generally very specific to a single organism or group of closely related organisms. There are two basic mechanisms for acquiring immunity – active and passive.

- **Active immunity –** protection that is produced by the person's own immune system. This type of immunity usually lasts for many years, often for a lifetime.
- **Passive immunity –** protection by products produced by an animal or human, and transferred to another human, usually by injection. Passive immunity often provides effective protection, but this protection wanes (disappears) over time, usually a few weeks or months.

Incidence: The number of new cases of a specified disease diagnosed or reported during a defined period of time divided by the number of persons in a stated population in which the cases occurred

Incubation: The time from the moment of inoculation (exposure) to the development of the clinical manifestations of a particular infectious disease.

Logistics (for surveillance): The management, obtaining and movement of human resources, diagnostic specimens and data supported through resource management, training and supervision.

Measles: An acute viral infection that is transmitted in the air, by respiratory droplets, or by direct contact with the nasal and throat secretions of infected persons.

Measles clinical case definition: Any person with fever and maculopapular rash and cough, coryza (runny nose) or conjunctivitis (red eyes), or any person in whom a clinician suspects measles.

Measles - clinically confirmed: A case that meets the clinical case definition and for which no adequate blood specimen was collected.

Measles, rubella and CRS control: reduction of measles, rubella and CRS morbidity and mortality in accordance with targets; continued intervention measures are required to maintain

the reduction.

Measles – discarded: A suspect case that meets the case definition but laboratory results are IgM negative.

Measles – epidemiologically linked: those people with febrile rash illness who had direct or indirect exposure to a clinically –or laboratory-confirmed measles case during time when disease transmission was possible.

Measles – laboratory confirmed: A case that meets the clinical case definition and is laboratory confirmed by a positive IgM antibody test.

Monthly reporting: Those health events that should be reported on a monthly basis. These health events usually include selected diseases of public health importance.

Morbidity rate: An incidence rate used to include all persons in the population under consideration who become clinically ill during a stated period of time. The population

may be limited to a specific gender or age group or to people with certain other characteristics.

Mortality rate: A rate calculated in the same way as an incidence rate by dividing the number of deaths occurring in a given population during a stated period of time, usually a year, by the number of persons at risk of dying during the period. A total or crude mortality rate relates to deaths from all causes and is usually expressed as deaths per 1000 persons. A disease-specific mortality rate relates to deaths attributable to only one disease and is often expressed as deaths per 100 000 persons.

Notifiable disease: A disease that must be reported to the authorities by law or ministerial decree.

Outbreak: The number of cases observed is greater than the number normally expected in a given geographical area during the same period of time.

Performance indicators: The quality of surveillance should be demonstrated with data on standard surveillance performance indicators or measures of the function of surveillance. An example of a performance indicator for acute flaccid paralysis (AFP) surveillance is the reporting rate of non-polio AFP per 100 000 population aged less than 15 years.

Periodicity: The presence of a repeating pattern of excess cases. The repeater can be in years, months or weeks.

Poliomyelitis: An acute viral disease characterized clinically by fever, sore throat, headache and vomiting, often with stiffness of the neck and back. In the minor illness these may be the only symptoms. The major illness, which may or may not be preceded by the minor illness, is characterized by involvement of the central nervous system, stiff neck, pleocytosis in the spinal fluid and perhaps paralysis. There may be subsequent atrophy of groups of muscles, ending in contraction and permanent deformity.

Prevalence: The total number of persons sick or exhibiting a certain condition in a stated population at a particular time (point prevalence) or during a stated period of time (period prevalence), regardless of when the illness or condition began, divided by the population at risk of having the disease or condition at the point in time or midway through the period in which it occurred.

Prodrome: An early or premonitory symptom of a disease.

Proportional morbidity: The relative amount of illness attributable to a given etiology (cause).

Reporting completeness: Proportion of all expected reports that were actually received (usually stated as "% completeness as of a certain date").

Reporting timeliness: Proportion of all expected reports that were received by a certain due date.

Reverse cold chain: In AFP surveillance the reverse cold chain involves transporting and storing stool specimens on ice from the moment of collection until arrival in a laboratory.

Sentinel site: A specific surveillance site, e.g. a hospital, clinic or health facility that collects surveillance data on a disease in order to provide an indication of the epidemiological trends of the disease in a wider area.

Specificity: The proportion of persons without disease who are currently identified by a screening test or case definition as not having disease.

Spot map: A map that indicates the location of each case of a disease by showing places that are potentially relevant to the health event being investigated, such as where the case lived, worked, or became ill.

Surveillance: The continuing systematic collection, consolidation and analysis of data and the dissemination of the information obtained to those who need to know in order that action may be taken.

- **Active surveillance -** when data are sought out by visiting or contacting a site and reviewing the medical records and registers of the site to identify cases.
    - **Aggregate surveillance –** surveillance of a disease or health event by collecting summary data on groups of cases (e.g. in many general practice surveillance schemes clinicians are asked to report the number of cases of specified diseases seen over a period of time).
    - **Case-based surveillance –** surveillance of a disease by collecting specific data on each case (e.g. reporting of details on each case of AFP).
    - **Community-based, facility-based** and **laboratory-based surveillance –** surveillance involving detection and notification by communities, health facilities and laboratories respectively.
    - **Comprehensive surveillance -** when data are collected from as many sites as possible throughout a country in order to achieve representativeness.
    - **Facility-based surveillance** - surveillance where the starting point for a report is a patient with a particular disease or syndrome who visits a health facility (hospital or health center).
    - **Passive surveillance -** when data are routinely collected and forwarded to more central levels on a routine basis, i.e. the data do not have to be requested on each occasion.
- **Routine disease surveillance** – the ongoing collection of information on health events

and usually includes number of health events by district by month. It sometimes also includes health events by age group and/or immunization status.

- **Sentinel surveillance –** the ongoing collection of information on health events from a limited number of reporting sites. Although these data are not representative of the entire country, they indicate trends and facilitate monitoring of severe diseases. More detailed data is often collected from sentinel surveillance sites than is possible from routine surveillance sites.

Timeliness: (1) The number of reports received on time compared to the number of health facilities designated to report. National authorities should define "on time" in accordance with local communication facilities. (2) The interval between the occurrence of an adverse health event and (i) the report of the event to the appropriate public health agency, (ii) the identification by that agency of trends or outbreaks, or (iii) the implementation of control measures. Effective disease surveillance provides information when it is due.

Thoroughness: The number of cases or outbreaks investigated compared to the number reported. Various time limits can be built in, e.g. the number of cases investigated within 48 hours after the receipt of reports.

Vaccine: a preparation containing weakened or dead microbes of the kind that cause a particular disease, administered to stimulate the immune system to produce antibodies against that disease. There are two basic types of vaccines: inactivated and live attenuated.

- **Inactivated vaccine –** composed of either whole viruses or bacteria, or fractions of either. These vaccines are not alive, cannot replicate, and cannot cause disease from infection, even in an immunodeficient person. Unlike live antigens, inactivated antigens are usually not affected by circulating antibody. Inactivated vaccines always require multiple doses. The immune response is mostly humoral; little or no cellular immunity results. Some inactivated vaccines may require periodic supplemental doses to increase, or "boost," antibody titers.
- **Live attenuated vaccine –** produced by modifying a disease-producing ("wild") virus or bacteria in a laboratory. In order to produce an immune response, live attenuated vaccines must replicate (grow) in the vaccinated person. Anything that either damages the live organism in the vial (e.g., heat, light), or interferes with replication of the organism in the body (circulating antibody) can cause the vaccine to be ineffective. The immune response to a live attenuated vaccine is virtually identical to that produced by a natural infection. These vaccines are generally effective with one dose, except those administered orally. Live attenuated vaccines may cause severe or fatal reactions as a result of uncontrolled replication of the vaccine virus.

Vaccine efficacy: A vaccine's ability to produce immunogenicity in the target population. Studies of efficacy often include the reduction in susceptibility and infectivity between those who are vaccinated and not vaccinated. The vaccine efficacy in terms of transmission

probabilities is defined as 1 minus the ratio of the transmission probability to a vaccinee and a nonvaccinee when both are exposed to a single infected person.

Vaccine potency: The amount of vaccine necessary to achieve the desired effect.

Vaccine vial monitor: A temperature-monitoring device or indicator applied to oral polio vaccine vials by major vaccine manufacturers in order to determine whether the cold chain has been maintained during vaccine transportation and storage.

Venipuncture: The collection of a blood sample from a vein, usually in the forearm, with a syringe and needle.

Weekly reporting: Those health events that should be reported on a weekly basis. Usually these require prompt action, but which are not as urgent as those on the immediately notifiable disease list.

Zero reporting: Reporting on a regular basis even if no cases are detected. The absence of surveillance reports in a given time period may indicate a failure of reporting or that no cases have been detected. Zero reporting removes this uncertainty.