



Request for Proposals: Pilot Project for Public Health Case Reporting Using Consolidated Clinical Data Architecture (C-CDA)

Table of Contents:

Part I. Overview Information

Part II. Full Text of Announcement

Section I. Funding Opportunity Description

1. Background
2. Purpose & Objectives
3. Deliverables
4. Project Period

Section II. Award Mechanism

1. Mechanism(s) of Support
2. Source of Funds
3. Funds Available

Section III. Eligibility Information

1. Eligible Applicants

Section IV. Application and Submission Information

1. Content and Form of Application Submission
2. Submitting an Application

Section V. Application Review Information

1. Criteria
2. Review and Selection Process

Section VI. Award Administration Information

1. Award Notices
2. Award Recipient Responsibilities
3. CSTE Responsibilities
4. NACCHO Responsibilities

Appendix. Example Test Specification

Part I: Overview Information

Issuing Organizations:

Council of State and Territorial Epidemiologists (CSTE) at www.cste.org

National Association of County and City Health Officials (NACCHO) at www.naccho.org

Participating Organizations: Centers for Disease Control and Prevention (CDC) at www.cdc.gov. Funded by Cooperative Agreement Numbers 5U38HM000414-05 and 5U38HM000449-02.



Part II: Full Text of Announcement

Section I. Funding Opportunity Description

Background

Public health agencies rely on complete and timely information about reportable conditions in order to identify, control, respond, and prevent outbreaks of disease or emerging conditions. Current electronic and paper-based public health case reporting suffers from a number of challenges and limitations, including: workflow burden on care providers and public health agencies, incomplete reporting of cases, missing data elements in case reports, and jurisdictional and condition variability in data elements and other reporting requirements.

Enabling electronic public health reporting can reduce the reporting burden on physicians and hospitals and improve public health surveillance and response by improving timeliness of provider reporting to public health, increasing the number of providers reporting to public health agencies, providing higher quality and more complete data to public health agencies, and establishing channels for future bi-directional communication, such as a follow-up report.

CDC and the Office of the National Coordinator (ONC) Standards and Interoperability (S&I) Framework, Public Health Reporting Initiative (PHRI) are working to reduce the reporting burden on care providers and public health agencies by harmonizing data elements across several public health domains and developing a standardized data structure through the implementation of the Consolidated Clinical Data Architecture (C-CDA). The PHRI has produced two work products, a set of harmonized data elements and a C-CDA library of templates for several public health conditions, which will be tested and demonstrated at pilot site(s). This pilot will help determine if and how the PHRI products can serve as resources to facilitate implementation of public health case reporting from clinical providers to public health agencies.

Purpose & Objectives

This joint funding announcement from the Council of State and Territorial Epidemiologists (CSTE) and the National Association of County and City Health Officials (NACCHO) is intended to support public health agencies to pilot the submission of public health case reports from an electronic health record (EHR) in a clinical care organization and the receipt of the case report for a reportable communicable disease by the public health agency. The purpose of the pilot includes the following objectives:

- Demonstrate the extent to which the harmonized data elements and specification templates developed by the PHRI are executable, feasible, and extensible. Document lessons learned from the pilot implementation, including the burden on public health agencies to implement and any problems that exist with the specifications.
- Provide and document feedback to PHRI stakeholders to improve harmonized data elements and template specifications.
- Identify and document business and technical requirements for implementation of a C-CDA format for public health case reporting. Documentation may include technical requirements for sending and receiving systems or a business process or process flow for a clinical vendor and health care agency on progressing from paper-based reporting to C-CDA-based electronic data exchange.



Technical assistance from CDC may be available to awardees for development of technical scenarios and any C-CDA updates to ensure conformance with existing jurisdictional regulations for reporting communicable diseases.

Deliverables

Progress reports will be expected on a monthly basis. By the end of the pilot project, awardees must:

1. Demonstrate in real environments with real data successful public health case reporting for a reportable communicable disease using a C-CDA message from a sender EHR at a clinical care organization to a receiving public health agency. The data exchange should be tested to ensure that data conforms to the PHRI case reporting specification.
2. Provide a written report that includes:
 - a. Description of business requirements for the development of a pilot testing criteria, including:
 - i. What it takes for a clinical system to implement this message specification (including when and how this message will be triggered and sent);
 - ii. What it takes for the health department to receive, route, ingest, and use the message; and
 - iii. Cursory Data Quality Check involving which data fields are critical and which of those are filled in with useable data.
 - b. Test specification according to the business requirements outlined above with test results (see Appendix for example test specification).
 - c. Recommendations (“lessons learned”) for organizations that would like to implement C-CDA-based public health reporting.
 - d. Description of any gaps in the PHRI technical documentation discovered during implementation.
 - e. Description of any updates to the technical documentation that resulted from the pilot.

Technical oversight for the project will be provided by CDC. CSTE, NACCHO, and CDC will review final deliverables to ensure that they meet the requirements and objectives of the project as described above.

Project Period

April 1, 2013 - September 30, 2013

Section II. Award Mechanism

Mechanism of Support

CSTE will manage all matters related to the financial support for this project for state health department awardees. NACCHO will manage all matters related to the financial support for this project for local health department awardees. CSTE and NACCHO will reimburse awardees upon invoicing for the project according to a Fixed-Cost contract with awardees. Recipients are responsible for allocating appropriate amounts to support activities, including compensation for contractors, for the duration of the project.



Source of Funds

CSTE receives funding through the Centers for Disease Control and Prevention cooperative agreement number 5U38HM000414-05. NACCHO receives funding through CDC cooperative agreement number 5U38HM000449-02. Funds awarded to applicants under this announcement are subject to the laws, regulations, and policies governing the U.S. Public Health Service grant awards.

Funds Available

Up to three (3) public health agencies will be supported, including up to one (1) local health department and up to two (2) state health departments. Successful applicants will be awarded up to \$70,000. Support for this activity is limited to one-time awards. All estimated funding amounts are subject to the availability of funds.

Section III. Eligibility Information

Eligible Applicants

State or local public health agencies who:

- Can demonstrate readiness for electronic receipt of a communicable disease report in a C-CDA format for either pertussis and/or tuberculosis.
- Currently use either the NEDSS-base system (NBS) or a Commercial Off-The-Shelf (COTS) system to operate their communicable disease reporting, including for pertussis and/or tuberculosis.
- Have demonstrated ability to work with a large clinical care provider or clinical care vendor with a high volume of C-CDA within their jurisdiction to exchange information for public health case reports.

Section IV. Application and Submission Information

Content and form of application submission

Interested applicants should describe their proposed plan for piloting public health case reporting for a reportable communicable disease using a C-CDA message from a sender EHR at a clinical care organization to a receiving public health agency and meeting the purposes and objectives described above. Applications should include the following headings in the order listed:

- Contact information (1/2 page maximum)
- Prior experience with C-CDA messages and electronic public health case reporting (1 page maximum)
- Description of project plan (3 page maximum)
- Proposed budget (1 page maximum)
- Proposed timeline (1 page maximum)
- Appendix – additional materials (not required and may not be reviewed)

For further assistance, technical questions, or inquiries about the application, contact Monica Huang at CSTE (770-458-3811 or mhuang@cste.org). Representatives from CSTE will be available to speak to potential applicants to discuss technical or administrative questions. All questions and answers will be made available to all potential applicants upon request.



Submitting an application

Applicants should email all requested materials in one attachment to Monica Huang at mhuang@cste.org by Friday, March 15, 2013. Notification will be sent to the applicant upon successful receipt of the application. All applications should be submitted electronically. Mailed applications will not be reviewed.

Section V. Application Review Information

Criteria: The criteria described below will be considered in the review process of all applications.

1. Applicant's understanding of the project and deliverables (20%)
2. Ability of the applicant to satisfactorily meet the objectives of the project described in Section I, above (60%)
 - a. Prior experience with C-CDA and electronic public health case reporting (15%)
 - b. Clear and detailed work plan for completing the project (15%)
 - c. Feasibility of proposed work plan (20%)
 - d. Feasibility of proposed timeline (10%)
3. Extent to which the budget is justified (15%)
4. Completeness of application (5%)

If multiple proposals are received, consideration may be given to applicants' geographical distribution.

Review and selection process

Eligible applications that are complete will be evaluated for scientific and technical merit by CSTE and NACCHO in accordance with the review criteria stated above. Funding awards will be made based upon the quality of the submitted proposal and the ability of the applicant to meet the criteria stated above.

Section VI. Award Administration Information

Award notices

Applicants will be notified via email or phone no later than Friday, March 29, 2013.

Award Recipient Responsibilities:

The award recipient will have primary responsibility for the following:

- 1) Accomplish the objectives and deliverables listed in this announcement.
- 2) Provide written progress reports and invoices to CSTE or NACCHO as required in the contract agreement.
- 3) Be available through multiple avenues for feedback and discussion (conference calls, etc.) on a regular basis (at least once monthly).

CSTE Responsibilities

CSTE will have the primary responsibility for the following:

- 1) Serve as state awardees' principal point of contact.
- 2) Facilitate work and provide avenues for communication between state awardees and stakeholders.
- 3) Monitor the terms of the agreements with state awardees.
- 4) Fund states awardees according to the terms of the agreement.



NACCHO Responsibilities

NACCHO will have the primary responsibility for the following:

- 1) Serve as the local awardee principal point of contact.
- 2) Facilitate work and provide avenues for communication between local awardee and stakeholders.
- 3) Monitor the terms of the agreement with the local awardee.
- 4) Fund local awardee according to the terms of the agreement.

For more information, contact:

Monica Huang, MPH
Senior Research Analyst
Council of State and Territorial Epidemiologists
2872 Woodcock Boulevard, Suite 303
Atlanta, GA 30341
Phone: 770-458-3811
Email: mhuang@cste.org

Appendix. Example Test Specification

Test Steps	Verify Supporting Documentation (e.g. Screenshots)	Verified by <Tester Name>	Test Date	Tester Comments
<p>1. <i>Public Health Infrastructure Implements the Pertussis Case Report Form in the IHE Retrieve Form for Data Capture (RFD) as the Form Manager</i></p> <p>Reference Documents:</p> <p>1. SDC Pilot Pertussis Minimum Required Fields .PHDSC project wiki pages. URL: https://wiki.phdsc.org/images/d/d5/SD-Minimum-Required-Fields.docx</p> <p>2. Integrating the Healthcare Enterprise. Information Technology Infrastructure (ITI) technical Framework. Retrieve Form for Data Capture (RFD) Integration Profile. URL: http://www.ihe.net/Technical_Framework/upload/IHE_ITI_Suppl_RFD_Rev2-2_TI_2011-08-19.pdf</p>				
1.1. Tester verifies that all jurisdiction-specific data requirements are represented in the Form for data capture	Screenshot	PHDSC Team	05/31/12 06/01/12 Review 06/04/12 Retest	05/31/12 Verified. Form contains all jurisdiction-specific data requirements
1.2. Tester reviews Form layout with relationship to the Public Health Paper Form layout	Screenshot	PHDSC Team	05/31/12 06/01/12 Review 06/04/12 Retest	05/31/12 Verified form layout contains required content.
1.3. Users (Public Health Team(s)) review Form for clinical context usability	Screenshot	SDC PHS	05/31/12 06/01/12 Review 06/04/12 Retest	05/31/12 Some attributes on form not used Seems as if all of the components are there; hospital name where baby born if less than 1 year old; name on epilink? Subset of symptoms; cough at final interview – not part of physician

				report; - complications; Missing question about intubation and pulmonary hypertension; in CDA include , but acute encephalopathy due to Pertussis; number of days taken – number of days prescribed or GIVEN; epilink not physician filled
1.4. Tester verifies that Form includes “Submit” button	Screenshot	PHDSC Team	05/31/12 06/01/12 Review 06/04/12 Retest	05/31/12 Verified. Submit successful
1.5. Tester verifies that drop-down or other features specified by the users are constrained to project-identified vocabularies where applicable	Screenshot	PHDSC Team	05/31/12 06/01/12 Review 06/04/12 Retest	05/31/12 Verified. Most drop-down lists are subset from the model influenced by the needs of the state;
2	<p><i>Test the Form with the EHR implementing the IHE Retrieve Form for Data Capture (RFD) Form Filler (Test Harness) Using the Continuity Care Document (CCD) to Pre-populate the Pertussis Case Report Form</i></p> <p><i>Reference Document:</i></p> <p>1. Integrating the Healthcare Enterprise. Information Technology Infrastructure (ITI) technical Framework. Retrieve Form for Data Capture (RFD) Integration Profile. URL: http://www.ihe.net/Technical_Framework/upload/IHE_ITI_Suppl_RFD_Rev2-2_TI_2011-08-19.pdf</p>			
2.1. Tester verifies that Public Health Infrastructure Form Manager provides formID to EHR (Test Harness) for Pertussis Case Report Form	Screenshot	PHDSC Team	05/31/12 06/01/12 Review 06/04/12 Retest	05/31/12 Verified. Public Health Infrastructure Form Manager provided formID to EHR for EHR Form Filler

				configuration.
2.2 Tester verifies that EHR Form Filler requests Form from the Public Health Infrastructure Form Manager using the formID for Pertussis Case Report Form	Screenshot	PHDSC Team	05/31/12 06/01/12 Review 06/04/12 Retest	05/31/12 Verified form surfaces in EHR Form Filler using formID.
2.3 Tester verifies that the EHR Form Filler is able to <ul style="list-style-type: none"> display the Form and allow data entry into all fields in the Form for a test patient. 	Screenshot	PHDSC Team	05/31/12 06/01/12 Review 06/04/12 Retest	05/31/12 Verified that the EHR Form Filler is able to display the Pertussis Case Report Form and allows for data entry in all form fields
2.4 Tester verifies that when an EHR Form Filler requests a Form from the Public Health Infrastructure Form Manager using a formID that is not known to the Form Manager, that the Form Manager returns an HTTP response code 404 (not found)	Screenshot	PHDSC Team	05/31/12 06/01/12 Review 06/04/12 Retest	05/31/12 Verified. Form Manager returns response code 404 (not found)
2.5 Tester verifies that Form Filler submits the Form, and that the Form is sent to the Form Receiver.	Screenshot	PHDSC Team	05/31/12 06/01/12 Review 06/04/12 Retest	05/31/12 Verified that 'Submit' selection creates CDA Pertussis Case Report document. File provided to Testers for validation in support of test 3.1.
2.6 Tester verifies that steps 2.1-2.5 can be repeated using different clinical values for a second test patient.	Screenshot	PHDSC Team	05/31/12 06/01/12 Review 06/04/12 Retest	05/31/12 Verified that 'Submit' selection creates CDA Pertussis Case Report document for second test patient. File provided to Testers for validation in support

				of test 3.1.
3	<p>Using the mapping defined in the Pertussis Data Definitions provided by the PHDSC Team, Present to the EHR Form Filler the Pre-populated Pertussis Case Report Form Allowing the User (Clinician) to Enter Additional Data not Already Provided by the EHR</p> <p>Reference Documents:</p> <ol style="list-style-type: none"> Reference Document #1: EMR CCD Pertussis Clinical Content Available in the EMR CCD Extract Provided by EMR Vendor generated in step 3.1 Reference Document #2: Pertussis Data Definitions Reference Document #3: Pertussis CDA Implementation Guide developed by the PHDSC Pertussis CDA Modeling Team 			
3.1. Tester verifies that EHR Form Filler provides a CCD document in the “Retrieve Form” transaction for pre-population with defined clinical content available from the EMR by	Screenshot Data File	PHDSC Team	05/31/12 06/01/12 Review 06/04/12 Retest	05/31/12 Verified. Pre-populated with minimal attributes provided through EMR (some demographics and provider info);
3.2. Tester verifies that using defined pre-population rules [Reference Document #2], the Form surfaced in the EHR has each field pre-populated for content provided by EHR by providing	Screenshot	PHDSC Team	05/31/12 06/01/12 Review 06/04/12 Retest	05/31/12 Verified. Verified. Prepop of minimal attributes provided through EMR (some demographics and provider info);
3.3. Tester verifies that Form is populated using vocabularies defined by the users (Public Health Team(s))	Screenshot	PHDSC Team	05/31/12 06/01/12 Review 06/04/12 Retest	05/31/12 Form verified. CDA Pertussis Case Report does not pass MDHT validation. Further review pending retest. 06/04/12 Verified. CDA Pertussis Case Report validated. Testing Successful –

				no errors
3.4. Tester verifies that the Form is populated reflecting any additional Pertussis Case Report content constraints	Screenshot	PHDSC Team	05/31/12 06/01/12 Review 06/04/12 Retest	05/31/12, 06/11/12, 08/10/12 No logic and edits implemented at this time
3.5 Tester verifies that the Form cannot be submitted without all project-identified required fields populated	Screenshot	PHDSC Team	05/31/12 06/01/12 Review 06/04/12 Retest	05/31/12, 06/11/12, 08/10/12 No logic and edits implemented at this time
3.6 Tester verifies that all Form fields can be manually filled with content constrained per the project defined Pertussis CDA Case Report Model (See Pertussis Implementation Guide [Reference Document #2])	Screenshot	PHDSC Team	05/31/12 06/01/12 Review 06/04/12 Retest	05/31/12 Verified. All fields are fillable
4	<p><i>Using the Form Manager, Transform the Data from the Pertussis Case Report Form into the CDA Pertussis Case Report Document Specified by the PHDSC Pertussis CDA Modeling Project Team at the Project Wiki URL: https://wiki.phdsc.org/index.php/CDA-Template_Pertussis</i></p> <p>Reference Documents:</p> <ol style="list-style-type: none"> 1. Pertussis Data Definitions 2. Pertussis Implementation Guide 3. MDHT Model Projects 			
4.1 Tester verifies that CDA Pertussis Case Report document is generated by Form Manager	Screenshot Data File	PHDSC Team	05/31/12 06/01/12 Review 06/04/12 Retest	05/31/12 Verified. CDA Pertussis Case Report XML provided (see steps 1.2, 3.1)
<ul style="list-style-type: none"> • Form Manager Provides screenshots and data file for EHR-generated CDA TB Case Report to tester (human readable and XML format) 				
4.2. Using screenshots captured during the Form filling process, Tester verifies that all content from the Form is present in the CDA	Screenshot	PHDSC Team	05/31/12 06/01/12	05/31/12 Unable to fully verify – Pertussis CDA had errors. NOTE:

<p>Pertussis Case Report document</p>			<p>Review 06/04/12 Retest</p>	<p>Mother not in CDA. Verified successful transmission. Screenshot of log provided showing document sent successfully to public health. 06/04/12 Verified. All content from the Form is present in the CDA Pertussis Case Report document</p>
<p>4.3 Tester verifies the CDA Pertussis Case Report Document (generated in step 4.1) using NIST CDA R2 Validation tool for errors.</p> <ul style="list-style-type: none"> Any errors generated by the NIST Tool reflect an unsuccessful test for this step Any warnings identified by the NIST Tool must be noted 	<p>Screenshot</p>	<p>PHDSC Team</p>	<p>05/31/12 06/01/12 Review 06/04/12 Retest</p>	<p>05/31/12 Verified. CDA Pertussis Case Report validated with no errors</p>
<p>4.4 Tester verifies using MDHT that the CDA Pertussis Case Report document (generated in step 4.1) is in conformance to the CDA Pertussis Case Report Model.</p> <ul style="list-style-type: none"> Any errors generated by the MDHT Tool reflect an unsuccessful test for this step. Any warnings identified by the MDHT Tool (e.g., where there is a constraint of 'SHOULD' not met by the tested document) must be noted. 	<p>Screenshot</p>	<p>PHDSC Team</p>	<p>05/31/12 06/01/12 Review 06/04/12 Retest</p>	<p>05/31/12: Errors identified. 06/04/12: Verified. CDA Pertussis Case Report validated with No errors</p>
<p>5</p>	<p align="center"><i>Send the CDA Pertussis Case Report Document to the Public Health Using the IHE Cross-Enterprise Document Reliable Interchange (XDR) standard</i></p> <p align="center">Reference Document:</p> <p>IHE Cross-Enterprise Document Reliable Interchange (XDR). URL: http://wiki.ihe.net/index.php?title=Cross-enterprise_Document_Reliable_Interchange</p>			

<p>5.1 Tester verifies that the CDA Pertussis Case Report document was successfully sent from Document Source to Document Recipient using Transport Layer Security (TLS)</p> <ul style="list-style-type: none"> • A screen capture log file from the sender and/or receiver providing evidence that the transaction was successfully sent to the recipient. • The tester verifies that the transaction is successful through witness of the interactive transaction and through review of the log file evidence. 	Screenshot	PHDSC Team	<p>05/31/12</p> <p>06/01/12 Review</p> <p>06/04/12 Retest</p>	<p>05/31/12 Verified successful transmission. Screenshot of log provided showing document sent was received by public health.</p>
<p>6 <i>Import the CDA Pertussis Case Report document into the Public Health Information System</i></p>				
<p>6.1 Tester verifies the transaction of importing the CDA Pertussis Case Report into Public Health Information System:</p> <ul style="list-style-type: none"> • Provide screenshot or log evidence that the Pertussis Case Report content was successfully received by the PH-IS. • Tester verifies that the transaction is successful through witness of the interactive transaction and through review of the log file evidence. 	Screenshot	PHDSC Team	<p>05/31/12</p> <p>06/01/12 Review</p> <p>06/04/12 Retest</p>	<p>05/31/12 Structure of CDA received was not correct in value set (e.g. cough, paroxysmal cough; Low vs. high)</p> <p>06/04/12 Verified successful content import into the PH-IS</p>