

The Office of the National Coordinator for
Health Information Technology



Joint Public Health Forum & CDC
Nationwide Webinar

February 15 , 2018

Putting the **I** in Health **IT**
www.HealthIT.gov

<https://www.cdc.gov/ehrmeaningfuluse/joint-public-health-forum--cdc-nationwide.html>



Meaningful Use

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- Public Health - EHR Vendors Collaboration Initiative
- Joint Public Health Forum & CDC Nationwide**
- Meaningful Use (MU) Public Health (PH) Reporting Requirements Task Force
- Community of Practice (CoP)
- ELR Task Force +
- Jurisdiction Meaningful Use Websites
- S & I Framework
- Reportable Conditions Knowledge Management System
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Joint Public Health Forum & CDC Nationwide



Community Profile

The Office of the National Coordinator for Health IT (ONC) and the Centers for Disease Control & Prevention (CDC) jointly sponsor this initiative, which features monthly webinars to foster collaboration amongst the public health jurisdictions across the nation, in response to the widespread adoption of electronic health records (EHRs) for Meaningful Use.

The objectives for this initiative include:

- Identify common questions and concerns around meaningful use
- Provide updates on federal partner activities in preparing for meaningful use
- Allow public health jurisdictions to share useful practices and current progress
- Identify technical assistance needs and priorities

Note: Webinar pre-registration is required and the instructions to register are provided in the Monthly Webinar Registration section below.

Please send in your feedback, questions, and/or suggestions for these Joint Public Health Forum & CDC Nationwide Webinars to the Meaningful Use Mailbox (meaningfuluse@cdc.gov).

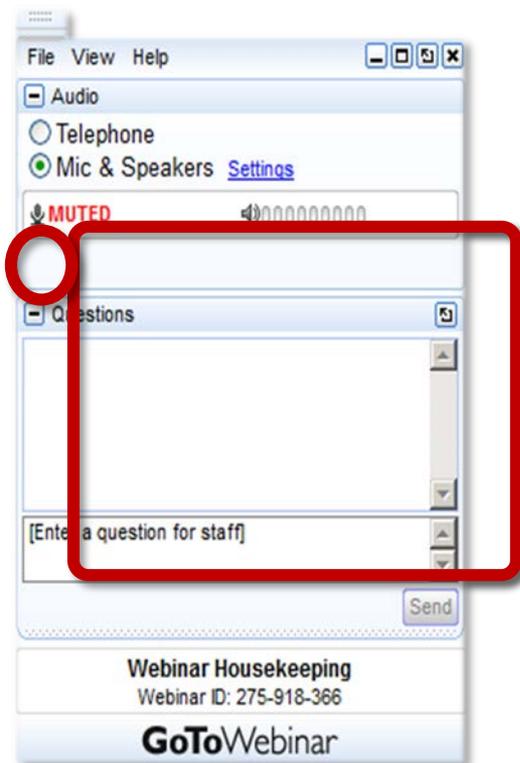
Meeting Schedule and Webinar Information

Meeting Schedule:

Office
ite 250
30341
8.3811
8.8516
ste.org

Question and Answer Session

How to submit or ask questions for the panel members?



- Submit or Ask Questions
- Submit your text question and comments using the Question Panel
- Please raise your hand to be unmuted for verbal questions.

Exploring Travel History Data Harmonization: Findings from a CDC/CSTE Workshop

Joint Public Health Forum & CDC Nationwide Call
Thursday, February 15, 2018

Presenters:

Nedra Garrett, CDC

Meredith Lichtenstein Cone, CSTE



Council of State and Territorial Epidemiologists

Who is CSTE?



- Member organization of states and territories representing public health epidemiologists
- Professional association for applied epidemiologists
- 1905 members (as of 2/12/18)
 - Active: 1368 (72%)
 - Associate: 379 (20%)
 - Student: 144 (8%)
- 6 Steering Committees, 30+ Subcommittees
 - Surveillance/Informatics Steering Committee: 444 members
 - Epis, informaticians, ELR coordinators, IT, surveillance system and program managers, HL7 specialists, fellows

Who is CSTE?



- CSTE National Office
 - Atlanta, GA
 - 50 employees
- Funded by CDC cooperative agreement number 5U38OT000143 (2013-2018)
 - Base award covers surveillance/informatics capacity building
 - E.g., harmonization and standardization work

Agenda



- Summary of CDC Travel History Harmonization Efforts (*Nedra Garrett*)
- Approach to CDC/CSTE Travel History Workshop (*Meredith Lichtenstein Cone*)
- Highlights from Workshop Discussions
- Workshop Takeaways and Next Steps
- Questions

CDC Travel History Harmonization Efforts



CDC Standards Management & Harmonization: Travel History Data Project

- **Who?** Travel History Data Harmonization Tiger Team convened to improve Travel History information
- **Why?**
 - Data harmonization across programs is very difficult at best
 - Travel History domain is widely used across many programs
 - Extra burden on State, Tribal, Local and Territorial (STLT) partners to submit similar data in different formats to different CDC programs and systems
 - Reduced ability to share surveillance data across programs
- **Outcome:**
 - The harmonization approach seen as highly promising (reduced the variability of Travel History questions from 171 to 42)
 - Validated the use of SDP Vocabulary Service
 - Transparent, open and inclusive process employed with cross-discipline, cross-program team members

Travel History Data Harmonization Tiger Team

- Purpose
 - Propose opportunities and recommendation to reduce diversity of Travel History questions
- Objectives
 - Analyze subset of Travel History questions, responses, value sets and data elements
 - Consider processes for sharing Travel History information
 - Document lessons learned and implications for subsequent data harmonization efforts
 - Propose opportunities to reduce diversity of Travel History
- Scope
 - Leverage existing NNDSS DEHP Travel History analysis and other information from SMH subgroup members

Approach for Preliminary Data Analysis

- Identify problem space: questions to be harmonized
 - Began with travel-related data elements
- Identify patterns in questions and candidate structured fields
- Propose question template with parameters (i.e., structured fields)
- Manually populate structured fields for each question
- Analysis: How many questions are covered by template?
- Analysis: How many unique values are there for each structured field in the template (e.g., how many ways to describe time period of interest)?
 - Identify redundant values (“onset” vs. “illness onset” vs. “symptom onset”)
 - Suggest harmonization for them

Diversity of Values for Template Parameters*

Template: Did the <person> [travel(to), live(in)] <location> [during the <time-period>] [before <event>]

Person	# occurrences
Patient	14
case patient	6
Subject	6
You	2
household member	3
mother	1

Time Period
There was tremendous variability in the time period of interest across different conditions of interest

Where	#
outside the US	5
outside the USA	1
internationally	6
foreign	1
out of US or Canada	2
outside state of residence	3
outside home state	2
interstate	1
out of county, state, or country	1
any travel	5
to endemic/epidemic case area	2

Event	# occurrences
illness onset	6
symptom onset	6
onset	5
illness	1
now	4
entering US	1

Destinations
Most are free text; a few use FIPS or other codes

*Harmonization opportunities are highlighted in yellow

Data Harmonization

Template: Did the <person> [travel(to), live(in)] <location> [during the <time-period>] [before <event>]

Travel History Questions

- Traveled out of county, state, or country?
- In the 6 months prior to illness onset did the subject travel outside of the state of residence?
- Exposure to travel outside home state in previous 7 days?
- Did the patient travel prior to onset of illness?
- Did the subject travel out of the county, state, or country in the 30 days prior to symptom onset?
- In the 10 days prior to illness onset, did the patient travel?
- Did the patient have a recent (prior 12 months) history of travel?
- In the 10 days prior to symptom onset did the patient have travel to foreign or domestic area with documented or suspected recent local transmission of SARS cases?
- ...

Data Harmonization

171 questions simplified to 42
(8 standard + 34 non standard)

Did the <person>
[travel(to), live(in)]
<location>
[during the <time-
period>] [before
<event>]

85% of overall travel history questions can be represented by harmonized template

Impact Analysis - Applying the template & harmonized parameters: Snapshot with Before and After Views

Template: Did the <person> [travel(to), live(in)] <location> [during the <time-period>] [before <event>]

Condition	Label / Name	Description (Before)	Template Applied (After)
		Any Travel	
Anthrax	Travel	Traveled out of county, state, or country?	Did patient travel out of county, state or country before symptom onset?
Brucellosis	Travel	In the 6 months prior to illness onset did the subject travel outside of the state of residence?	Did patient travel out of county, state or country in the 6 months before symptom onset?
Cholera	TRAVEL	Exposure to travel outside home state in previous 7 days?	Did patient travel out of state in the 7 days before symptom onset?
Cryptosporidiosis	Travel Prior To Onset	Did the patient travel prior to onset of illness?	Did patient travel out of county, state or country before symptom onset?
Giardia	Travel Prior To Onset	Did the patient travel prior to onset of illness?	Did patient travel out of county, state or country before symptom onset?
Leptospirosis	Travel	Did the subject travel out of the county, state, or country in the 30 days prior to symptom onset?	Did patient travel out of county, state or country in the 30 days before symptom onset?
Novel Influenza A	Epi Risk – Travel	In the 10 days prior to illness onset, did the patient travel?	Did patient travel out of county, state or country in the 10 days before symptom onset?
Rabies, Human	Travel	Did the patient have a recent (prior 12 months) history of travel?	Did patient travel out of county, state or country in the 12 months before symptom onset?
SARS	Travel to SARS area	In the 10 days prior to symptom onset did the patient have travel to foreign or domestic area with documented or suspected recent local transmission of SARS cases?	Did patient travel to a location with documented or suspected recent local transmission of SARS cases in the 10 days before symptom onset?

Detailed List of Questions, Parameters, Values and Response Sets (1 of 2)

Theme		Question Template	Question Parameters & Values		Response Sets
1	Any travel	Did the <person> [travel(to), live(in)] ¹ <location> ⁰⁻ⁿ [during the <time-period>] ^{0,1} [before <event>] ^{0,1} ?	Person	Patient, Case Patient, Subject, You	PHVS_YesNo_HL7_2x
2	Foreign travel		Location	Outside the US, Out of State of Residence, Out of County, Endemic/ Epidemic Case Area	
3	Domestic Travel		Time-Period	<Number> Days/Weeks/Months/Years	
			Event	Illness onset, Symptom onset	
4	Travel Destinations	List travel destinations and reason for travel during the last <time-period>.	Time-Period	<Number> Days/Weeks/Months/Years	Travel Destination: PHVS_County_FIPS_6-4, PHVS_StateProvinceOfExposure_CD, PHVS_CountrySubdivision_ISO_3166-2, PHVS_Country_ISO_3166-1, PHVS_GeographicRegion_NETSS
5	International Destinations				
6	Domestic Destinations				
7	Reason for Travel				Reason for Travel: Airline/Ship Crew, Business, Medical/Relief Response, Medical Procedure or Treatment, Military, Missionary, Peace Corps, Refugee/Immigrant, Student/Teacher, Visiting Friends/Relatives, Tourism/Vacation/Leisure, Unknown, Volunteer - Other, Other-Specify

Detailed List of Questions, Parameters, Values and Response Sets (2 of 2)

Theme		Question Template or Question	Parameters and Values		Response Sets
8	Immigration	Did subject immigrate to U.S. within <time-period> of illness onset?	Time-Period	<Number> Days/Weeks/Months/Years	PHVS_YesNo_HL7_2x
		Length of time subject has been living in U.S.			<Number> Days/Weeks/Months/Years
9	Destination Type	Destination Type			PHVS_TravelDestinationType_FDD
10	Dates of Travel	Dates of Travel			MMDDYYYY, MMYYYY, YYYY
11	Duration of Travel	Duration of Travel			<Number> Days/Weeks/Months/Years
12	Mode of Travel	Mode of Travel			PHVS_TravelMode_CDC
13	Miscellaneous				

What next?

Near term

- Work with SDP Vocabulary Service and publish 8 questions
- Incorporate recommendations from CSTE workshop
- Identify execution plan for mid term & long term actions



Mid term

- Develop question templates for rest of DEHP analysis and add to SDP Vocabulary Service
- Tie questions to data elements and revisit aligning with standards and message guides
- Promote use of standardized questions and get program adoption in new data collection instruments

Long term

- Evaluate use of templated questions and ROI of harmonization proposal
- Align with external standards

Approach to CDC/CSTE Travel History Workshop



CSTE/CDC Harmonization Workshop: Travel History



- October 3-4, 2017 in Atlanta, GA
- 42 attendees
 - Alabama
 - Arizona
 - Florida
 - Idaho
 - Maryland
 - Maricopa County
 - Massachusetts
 - Michigan
 - New York City
 - North Dakota
 - Ohio
 - Tennessee
 - Utah
 - Virginia
 - CDC, MITRE
 - CSTE

CSTE/CDC Harmonization Workshop: Travel History



- **Purpose:** To gain a better understanding of CDC's harmonization efforts and how jurisdictions collect travel history data and identify strategies for future collaboration.
- **Objectives:**
 - Learn about CDC/MITRE's approach to harmonize travel history data
 - Share jurisdictional experiences and examples of collecting travel history data to help clarify travel history data supply chain
 - Gather jurisdictional feedback on harmonization approach
 - Identify potential strategies to address variability in travel history data
 - Identify barriers and challenges to travel history data harmonization
 - Identify next steps that CDC and CSTE can take individually and collaboratively to further travel history data harmonization and harmonization of other surveillance data

Highlights from Workshop Discussions



Importance of cross-program coordination

- When CDC programs ask for similar data in different ways:
 - Reduces efficiency when same STLT staff are doing all the work to report to different systems, resulting in less time spent on day jobs (e.g., case investigations)
 - Forces lack of harmonization at state level, adds burden
 - Reduces efficiency to adapt systems and reporting tools to meet program needs
 - Lessens data quality at state level
 - Especially difficult for emerging diseases

Addressing variability

- Currently a lot of variability in STLT travel history data collection
 - Despite variability, themes are similar
 - Some variability/diversity is needed at jurisdiction level
- Reducing number of questions is helpful if it helps increase consistency, but some variation is valid/useful
- Harmonization doesn't affect case investigation, but would change way questions are asked and recorded
- Important: focus on horizontal harmonization (across programs), not vertical harmonization (from local to state to CDC)

Data submission

- Submitting data in standardized [electronic] way is the ideal
 - MMGs = great start, more work needed
 - E.g., Gen v2 allows for limited travel history info (one state and one country of exposure, but there are frequent cases that travel to multiple states/countries)
- CDC programs need to understand how data are collected at STLT level
 - Workshop is great start to better understanding
- Which travel history data elements are essential for CDC research/analysis vs. which are needed only for local/state case investigations?
 - Sometimes data requests are unclear; confusing with level of granularity requested

Success factors

- The harmonization approach would be useful if:
 - CDC programs agree data elements are sufficient and won't ask for additional supplemental data
 - Need program buy-in
 - Need STLT input, and early
 - Decisions are final before STLT implementation
 - Pilots are acceptable, so “close to final”
 - Re-adjusting STLT systems when decisions change is burdensome and risky
 - Harmonization buy-in must span across leadership, centers AND programs and be ongoing

Barriers and challenges

- Need to have some flexibility
 - Travel vs. residency
 - Broader questions from CDC would allow for states to better map to their data (allows for STLT variability)
- Buy-in/support/adoption at CDC
- Buy-in/support/adoption at STLT
- Lack of consistent STLT input
- New surveillance systems for emerging threats
- Lack of standardized travel history questions in EHRs

Workshop Takeaways



Takeaways



- Harmonization approach could be reused
- Cross-program collaboration is integral
- Commitment must be turned into action
- STLT involvement in harmonization, SDP/data collection conversations
 - STLT ready and willing
 - CDC willing
- “One message, one way, one time”
 - AKA “one message, one vocabulary, one portal” from CSTE Position Statement 15-EB-01
 - Would increase efficiencies, decrease burden and redundancies

Takeaways



- CSTE attendees would like to continue to work on harmonization efforts, at federal and STLT levels
 - Conversations, updates on progress should be highlighted on CSTE Subcommittee calls
 - Willing to join harmonization-focused working group
 - Interested in providing periodic feedback to CDC harmonization workgroup
 - Would sign up for a harmonization-focused newsletter
 - Would attend future harmonization workshops
- Future priority data elements for harmonization included:
 - Pregnancy status (listed as top priority for 50% attendees)
 - Onset date, report dates
 - Vaccination history, symptoms, food history, treatment, occupation/industry, exposure and contacts

Next Steps



CSTE Next Steps



1. Support creation of harmonization-focused, cross-program workgroup/steering committee at CDC
 - Share STLT perspectives, participate when possible
2. Create Data Standardization Workgroup
 - Launches March 2018
 - Co-chaired by CSTE members, managed by CSTE consultant
 - Workgroup charge: To convene epidemiologists and informaticians to develop consensus on common definitions for core surveillance data elements to address jurisdictional variation.
3. Follow-up workshop Spring 2018
 - SDP Vocab Service

CDC Next Steps

- Continue to work with CSTE Data Harmonization workgroup to get input/feedback on data harmonization activities
- Continue to work with SDP Vocabulary Service and publish 8 questions
- Develop question templates for rest of DEHP analysis and add to SDP Voc Svc
- Tie questions to data elements and revisit aligning with standards and message guides
- Promote use of standardized questions and get program adoption in new data collection instruments
- Evaluate use of template questions and data elements and ROI of harmonization proposal
- Align with external standards
- Leverage harmonization process for other priority data elements (e.g. pregnancy)



Questions?



A large, stylized graphic of the number '1000' is positioned on the left side of the page. The number is composed of several segments, each filled with a different shade of blue (light blue, medium blue, and dark blue) and overlaid with a white geometric pattern of interconnected lines forming a grid of triangles and hexagons. The background of the entire page is a light beige color with a faint, repeating version of this geometric pattern.

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