Meeting Notes

Subject: Conf. Call on Health/Medical Capability Reporting & Information Management Solutions

Date: April 7, 2020

Time: 4:00pm-5:00pm EDT via virtual meeting

Participants

- Ted Okada, FEMA Chief Technology Officer
- Dr. Kathleen Kaplan, FEMA Chief Data Officer
- Ryan Remchuk, FEMA Data Management Branch Chief
- Nikolay Lipsky, CDC Medical Epidemiologist; Informatics Scientist
- Robert Shankman, HHS/ASPR
- Natalie Aviles HHS/ASPR
- Matthew Luce, FEMA
- Nate Workman, FEMA
- Elysa Jones, OASIS Chair, Emergency Management Technical Committee
- Rebecca Harned, NAPSG Foundation
- Tari Martin, NAPSG Foundation
- Patti Aymond, CS Professor LSU/OASIS
- Lauren Knieser, AINQ/HL7
- Keith Boone, AINQ/HL7
- Scott Robertson, Kaiser Permanente HL7/OASIS Liaison
- Austin Kreisler, HHS/Leidos/HL7 Staff
- Margaret York, Palantir
- Brandon Geils, Palantir

Objectives and Key Findings

- **Objective 1:** Learn how existing OASIS standards (and other existing standards) for open, secure, and standardized APIs are currently supporting information management and automated sharing of health/medical capability & availability data in support of COVID-19.

  **Key Finding 1:** There are existing standards today that provide the basis for the interoperable framework necessary to leverage (where available) existing automated reporting capabilities provided by hospitals, localities, and states.
  - Relevant Standards Include: HAVE 1.0, HAVE 2.0, HL7 V2, TEP

- **Objective 2:** Learn about and discuss near-term and long-term solutions to leverage existing automated reporting capabilities available by hospitals, counties, and/or states by connecting those data feeds with other reporting systems in-use by State and Federal agencies.

  **Key Finding 2:** Currently there are multiple efforts underway for collecting and aggregating reporting data on key health/medical capability information points.
  - Implement a standardized reporting framework that is based on a consistent set of health/medical capability EEIs and data points.
- Serves as the foundation for a standardized and interoperable data schema for health/medical capability reporting across all levels of government and among associated systems.
  - Leverage, wherever possible, existing automated reporting capabilities provided by hospitals, counties, and states using standards-based open and secure APIs.
    - Reduces duplication of reporting requests and reduces the amount of manual reporting burdens on an already strained public health workforce.
  - Implement an interagency / community-wide effort to ensure all health/medical capability data is collected in standardized and interoperable formats and shared appropriately using standards-based open and secure APIs.
    - Increases and automates data exchange across hospital and health information systems in a standardized and secure way.

**Discussion Notes**

1. **What role does OASIS and Saner play as it relates to COVID-19 response?**
   - OASIS is an international standards development organization focused on free, open standards and open source.
     - See: https://www.oasis-open.org/
     - Number of standards (if implemented) directly support automated data exchange among hospital and public health information systems
   - Saner (Situational Awareness for Novel Epidemic Response) is an initiative launched by Audacious Inquiry in response to concerns from public health departments, health information exchanges supporting public health.
   - Both OASIS and Saner are focused on enabling standardized and automated Hospital availability data exchange and interoperability.

2. **What are the key issues OASIS and Saner are addressing in COVID-19 response?**
   - Both are looking at immediate needs for public health regarding the current situation in terms of how existing standards can/should be applied to improve data exchange and sharing among hospitals and health agencies.
     - Starting at hospital level and aggregating up to regional levels by zip code, county, states, etc.
   - **Key Issue:** How can we leverage data already within hospital-level IT systems that have direct connections?
     - Both OASIS and Saner are working to address this,
       - OASIS providing the open standards and jointly released with HL7 implementation guidance.
       - Saner developing a technical implementation framework and guidance known as FHIR = Fast Healthcare Interoperability Resource (Health Level 7 Standard, modern tech for ReSTful APIs) - http://hl7.org/fhir/directory.html
   - **Critical Issue/Question Identified:** How does the data get collected and flow to be automated whenever possible to eliminate manual entry/reentry of data?
   - **Critical Need to Begin Addressing Issue:** Need to establish common and consistent Core Information Requirements / Essential Elements of Information (EEIs) (in the form of a
common data schema) for all critical health/medical capabilities, including but not limited to:
  o Hospitals/Care Site bed capacity & availability, ventilator capacity & availability, etc.
  o Expansion capacity for care sites
  o Personal Protective Equipment (PPE) for medical staff
  o Staffing levels at hospitals/care sites and surge/expansion of health care workforce
  o Immunization development and capacity
  o Extent of available testing

3. What is the Extent of Adoption of HAVE 1.0 and HAVE 2.0 by Hospitals Today?

Adoption History

a. In 2003 DHS Science and Technology (S&T) following the great success of the Common Alerting Protocol initiated an effort to identify other standards to support emergency response. With input from state, local, and federal agencies - scenario teams were formed and needs identified that include the following:
   i. HAVE (hospital availability exchange) and TEP (patient tracking) were two key needs.
   ii. Draft messaging specifications were developed with input from over 100 diverse responder agencies and groups.
   iii. HAVE and TEP drafts were used successfully in a national FEMA level exercise with data being exchanged between local civilian, NDMS, JPATS, various software systems and hospitals in three different states.
   iv. Once vetted, these were provided to OASIS EMTC for formalization and creation of international standards.

b. HAVE 1.0 was complete and successfully used by several companies during the response to the Haiti Earthquake. Hospital location and resource details was successfully exchanged. Lessons learned informed the following HAVE 2.0
   i. Recognized as an international standard

c. Level of specifications within HAVE 1.0 is a much higher level of granularity in the type and extent of data being reported than in CDC’s COVID-19 Module via NHSN

d. HAVE 2.0 has evolved and moved to HL7 to support broader/wide scale adoption
   i. An OASIS/HL7 jointly released cross-paradigm cross-implementation developers guide is available to support developers in implementing the HL7 standard.

e. Adoption Example: A medical systems vendor known as Global Emergency Response using standards and are in-use by several SLTT agencies and hospitals to automate data sharing and exchange.

4. What is the Extent of Adoption of FHIR by Healthcare Today?

a. Number of different companies currently implementing against it
   i. Adoption is occurring at the medical systems level, hospital inventory control systems, etc.
b. Effort right now is to deliver tools that can tap into existing information streams in support of automating information management and sharing workflows for reporting during COVID-19 response

c. FHIR via Saner has been operating for 2 weeks during COVID-19 and is rapidly expanding

d. FHIR via Saner currently has a team developing solutions that can be implemented, looking to test proof of concept by mid-May and then move into Pilot phase

e. Discussed that there are ~3 other similar initiatives underway with similar release dates.
   i. No detail was provided about these other 3 similar initiatives, though they should be explored and investigated to determine potential to support implementation of an open, interoperable, secure, and standardized framework to automate workflows

f. Should be acknowledged that there is a difference between immediate efforts to collect reporting data from hospitals VERSUS longer-term solutions to automate collection of data from hospitals/healthcare
   i. Need to work on both immediate and longer-term solutions simultaneously
Current Information Flow for Reporting Health / Medical Capability Reporting

- All information below is based on information discussed on conference call. This workflow may be incomplete as the process is rapidly evolving and changing during current COVID-19 response.

- **Hospital Reporting on Capability & Capacity Status Reporting**
  - CDC NHSN COVID-19 Module (Daily)
  - Hospital WebEOC or Equivalent Crisis Management Systems
  - County Health Officials
  - Regional Health Organizations
  - State Health Agencies
  - CDC’s Palantir Platform
  - American Hospital Association Survey (Daily)
  - Data Call & Spreadsheets Submitted via Email to HHS & FEMA Regions
  - County EMS Directors
  - Computer Aided Dispatch Systems
  - Informs Call for Service Routing to Hospitals and Diversion

- **All Sources Fed to Data Scientists & Modelers to Inform Projections**

- **Green** represents manual data entry workflows for reporting.

- **Purple** represents unknown data integration workflow (manual vs. automated w/ standard APIs).